

# Exploring the impact of landscape design on user preferences in shopping centers post the COVID-19 Pandemic

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## Abstract

This study explores the impact of landscape design, which has gained importance alongside architectural changes in shopping centers, and investigates preferences in the post-COVID-19 pandemic era. Although e-commerce has increased during the pandemic, research and societal behaviors suggest that shopping centers will continue to serve as contemporary agoras due to their socialization and leisure functions. However, in response to the pandemic, it is anticipated that newly designed shopping centers will be architecturally conceived as semi-outdoor or outdoor spaces, regardless of climate conditions. This transformation will involve the softening of rigid appearances through landscape elements, making them both ecologically and psychologically sustainable. The number of studies on this subject is limited. To address this knowledge gap, an online survey was conducted with 586 randomly selected users across nine shopping centers located in three major cities of Turkey: Istanbul, Ankara, and Izmir, with three shopping centers in each city. The survey investigated users' preferences for architectural styles (indoor, semi-outdoor, or outdoor) and landscape design in shopping centers. The findings of the study indicate that post-pandemic, outdoor and semi-outdoor shopping centers are likely to be preferred more frequently. An emphasis is likely to be placed on natural landscape elements such as plants and water features in landscape design. Furthermore, shopping center designs are likely to become simpler, offering comfortable and spacious navigation areas while optimizing parking and transportation conditions. This study is expected to shed light on decision-making processes for future shopping centers. By incorporating consumer preferences, architects can enhance the sustainability of shopping center investments through next-generation design.

*Keywords:* indoor, semi-outdoor, outdoor shopping centers, landscape design

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## 1. Introduction

Shopping is one of the most significant means of interaction among individuals. The act of shopping has evolved from the past to the present and has remained a continuously developing activity. Especially in urban settings, shopping holds a central position among various activities. Urban centers not only serve as focal points for commercial activities but also host numerous social events. These events are perceived as a means of socialization for individuals.

Public spaces play a crucial role in enabling people to interact with each other, engage in social activities, and establish a sense of shared community life. From this perspective, it can be argued that the development and transformation of the shopping phenomenon are inseparable elements of public spaces. The rapid population growth in cities has led to spatial transformations aimed at meeting the needs of society. This transformation has given rise to shopping centers, which have become the focal point for commercial and social activities, leading to a significant shift in consumption patterns.

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Shopping centers have evolved into spaces where people can not only fulfill their shopping needs but also engage in cultural, artistic, and entertainment activities. They have become new venues where various aspects of life converge. In today's society, shopping centers have assumed a prominent role as modern public spaces. These centers have expanded into large spaces that encompass not only stores catering to shopping needs but also units designed for leisure and entertainment (Biol, 2005; Toksözlü, 2011). In this context, landscape design in shopping centers has gained importance. It has become essential for shopping centers to have landscape designs that meet the expectations of visitors.

In accordance with the universal standards set for shopping centers, various practices have been established, encompassing shopping corridors, central squares, floor heights, activity areas, parking facilities, fire safety measures, service and storage areas, earthquake resistance, structural systems, and security measures. Structural landscape design criteria for shopping centers should be evaluated based on functionality, exterior appearance, readability, user guidance, spatial organization, structure and materials, scalability, transitions, lighting, the utilization of landscape features, and color use (Birişçi et al., 2012). Furthermore, when considering the plant design elements such as plants, texture, line, color, and form, as well as principles like balance, emphasis, repetition, proportion, harmony, contrast, and diversity, it becomes possible to contribute to the creation of unique spaces with characteristics like establishing a background, enhancing spatial effects, eliminating monotony, and adding movement and color to the space.

Plants have the potential to influence the dimensions of the space in both vertical and horizontal directions, and their compatibility with each other is crucial. In this context, the design of plants should be in harmony with the dimensions of the space (Khabbazi, 2009; Birişçi et al., 2012).

The Covid-19 pandemic has profoundly reshaped contemporary social life and significantly impacted the dynamics of shopping centers. Measures implemented during the pandemic, such as periodic closures and restricted operating hours, marked the onset of a new era for these spaces. Indeed, shopping centers were prominently featured among the areas where reduced human presence was strongly advocated. This led to a prevalent belief that some shopping centers would face heightened competition due to the pandemic, while those that effectively managed the crisis and survived could potentially emerge in a stronger position. Various viewpoints exist regarding the future of shopping centers in the post-pandemic era, with the prevailing perspective emphasizing more cautious investments compared to previous times.

According to this perspective, shopping centers will be developed based on demand and competition analyses aligned with consumer needs. Consumer expectations are deemed the most critical factor in this context, as the survival and sustainability of shopping centers hinge on their ability to attract consumers. Consequently, it is plausible to predict that architectural changes and landscape design will assume greater prominence.

Given the heightened emphasis on public health resulting from the Covid-19 pandemic, shopping centers must be designed to provide appropriate environments. It is crucial to contemplate the extent to which the design of semi-outdoor and outdoor shopping centers, coupled with the integration of landscape elements, will become more prevalent. Additionally, it is essential to ensure the sustainability of these environments in accordance with consumer preferences.

Indeed, it has been observed that despite the opening and closing phases during the pandemic, people's strong interest in shopping centers for meeting their needs and socializing has continued. Therefore, researching the impact of landscape design on user preferences in shopping centers after the Covid-19 pandemic holds great importance for the sustainability of shopping centers.

In this context, the primary aim of the research is to investigate the criteria used for creating landscape designs in shopping centers, how landscape elements are determined, the significance of landscape from the perspective of visitors, and their expectations. The study aims to uncover the impact of landscape design in shopping centers on visitors, evaluate the changes in landscape

design from the past to the present, and identify the criteria preferred by visitors in landscape design. Within this scope, the hypotheses of the research have been formulated as follows: H1: Landscape design in shopping centers directly affects visitors psychologically. H2: The choice of landscape elements in design varies based on the type of shopping center (indoor/outdoor). H3: Visitors in shopping centers make their preferences based on landscape design. H4: Landscape design in shopping centers is most crucial in circulation areas and dining areas.

### *1.1. An Overview of Shopping Centers*

Shopping is one of the significant activities in the lives of consumers. The concept of shopping is constantly evolving, and understanding and researching this field are essential for ensuring an enjoyable shopping experience and customer satisfaction (De Juan, 2004). Shopping centers are spaces that aim to make the shopping experience more comfortable and can be described as social hubs for various activities (Teller et al., 2008). Generally, shopping centers in the 21st century are seen as living spaces with the goal of meeting all types of consumer needs. The widespread adoption of markets, supermarkets, and subsequently hypermarket designs in metropolises has prepared consumers to conduct their shopping activities in new locations. A shopping center is a place located away from the central business district, designed to meet new shopping needs, and contains retail sales areas (Abrudan, 2011). Every shopping center includes a large retail store, with the supermarket in the shopping center being the primary traffic generator. The shopping area and the types of needs in each shopping center vary (Bloch et al., 1994). It is acknowledged that shopping centers enhance shared economies, and they are intermittent structures where a series of commercial activities operate together to create a general order and rules. These shopping spaces are a result of collaboration between several stakeholder groups and are a naturally evolving planning process (Rahimi & Khazaei, 2018). A shopping center is a commercial center planned and developed in accordance with a concept, managed as an integrated entity by a single management body. Alkibay and colleagues have provided a broader definition of shopping centers. According to their definition, shopping centers are facilities that encompass multiple departments within a planned architectural structure, with various-sized retail stores, as well as establishments such as restaurants, cafeterias, exhibition halls, pharmacies, entertainment centers, banks, and cinemas. These facilities typically vary in size, ranging from 5000 m<sup>2</sup> to up to 300,000 m<sup>2</sup>, and are often located outside urban areas, managed from a single center (Alkibay et al., 2007). This definition also includes information about the size of shopping centers.

Shopping centers are unique spaces that encompass not only shops but also various service environments for communication, such as cafes, cinemas, and dining options, in addition to their surroundings. Shopping centers serve as central places where people can access various services, retail sales, and entertainment activities alongside shopping (Wong & Nair, 2018). Changes in shopping habits, the increasing need for open spaces, and people's preference for social areas have transformed shopping centers from being solely indoor spaces for shopping. In addition to enclosed areas, shopping centers have become vibrant lifestyle centers that offer users the opportunity to enjoy their time in semi-outdoor and outdoor spaces. In fact, open-air shopping centers located away from city centers have become more popular compared to enclosed shopping centers remaining in the city center (Ceylan et al., 2018).

### *1.2. Shopping Centers and Landscape Design*

Shopping centers encompass architectural structures that accommodate a multitude of activities, including offices, residential units, dining establishments, cultural and artistic venues, and public amenities, thus giving rise to novel living spaces characterized by a communal nature. It can be noted that projects with open or semi-open typologies are being developed with different concepts, striving to create a street and avenue concept reminiscent of urban spaces. Shopping centers adhere to universal standards, establishing qualitative and quantitative criteria for aspects such as shopping corridors, central voids, parking areas, floor heights, service and storage spaces, activity areas, security measures, and earthquake resilience structures. In the context of shopping

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centers, landscape design criteria should be evaluated in terms of the building's exterior appearance, circulation, user guidance, functionality, adaptability, space organization, structure and materials, transitions, color utilization, and the incorporation of landscape elements and lighting fixtures (Birişçi et al., 2012).

Furthermore, when evaluating the plant selection in landscape design based on elements of botanical design such as texture, line, color, and form, along with principles like diversity, proportion, balance, repetition, contrast, emphasis, and suitability, it can be noted that they contribute to the creation of unique spaces by establishing backgrounds, enhancing spatial effects, creating alleys, defining boundaries, and adding color and movement to the environment. The volume gained by plants, both vertically and horizontally, also influences the scale of the designed space. In addition to their individual harmony, plants should harmonize with each other as well. Designs that are proportionate to the scale of the area can have positive impacts on the space (Khabbazi, 2009; Birişçi et al., 2012). Plant materials have become an integral part of human life as natural landscape elements. With a focus on environmental awareness and the continuity of the natural order, plant materials have been increasingly employed in shopping centers (Pakvaran, 2010). Additionally, water features, being an inseparable part of nature and appealing to people both visually and aurally, are included among the natural elements used in the design of shopping centers. In this context, plant materials and water elements are natural components used in shopping center landscape design.

In the field of landscape architecture, plants form the essence of environmental design efforts. Plants hold a significant place in urban and rural space planning and design. Especially in the creation of functional and aesthetically pleasing spaces, plants play an essential role in softening hard elements such as structures, walls, and stone flooring used in landscape design. These types of landscape elements contribute to giving the environment a more natural appearance and make spaces resemble a closer connection to nature for people. The appearance of green spaces develops over time due to plant growth, which adds a temporal dimension to a landscape. From a designer's perspective, due to the effects of plants in terms of form, size, color, texture, light, movement, shade, and more, plants are recognized as landscape elements that offer various design options (Öztan, 2004).

Water elements, on the other hand, are an integral part of natural landscape elements and hold a significant position in landscape design. The use of water elements in shopping centers is increasing due to the visual and auditory effects created by the sound of flowing water, as well as its cooling properties. The preference for incorporating water elements in the design of shopping centers is due to the positive effects it has on the perception of space and the well-being of individuals. In landscape design, the proper utilization of water elements requires an understanding of the flow behavior of water to engage effectively with people. Physical laws alone may not be sufficient to explain how water elements affect and are perceived by individuals. Therefore, the use of water elements can have a substantial impact on spaces (Moore, 1994).

In the realm of architectural landscape design, structural materials encompass various elements, including flooring materials, roofing and upper covering components, boundary features, infrastructure, and equipment elements. Among these, flooring materials hold a pivotal role in landscape design. The horizontal surface, which functions as the structural foundation of the space, becomes a floor when adorned with suitable materials tailored to its intended purpose. This not only serves a functional role but also contributes to the aesthetics of the space, introducing diverse elements such as materials, colors, textures, and dimensions (Uzun, 2007). In the context of shopping center design, structural elements used for the purposes of confinement, privacy provision, preservation of landscape areas, and defining space are considered significant. Boundary elements such as fences, railings, walls, and similar structures serve as both complements to landscape areas and determinants of space and volume. Additionally, they fulfill functions such as demarcation, restriction, control of wind and noise, aesthetic enhancement, and providing support for vegetative elements. Furthermore, the design of boundary elements should harmonize with

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other structural components and, if necessary, be integrated into the design alongside elements like seating elements and pergolas (Güney et al., 1995).

Structural elements such as roofs and overhead covering elements are designed as aesthetic elements with the purpose of protecting outdoor spaces from rain and sunlight. These elements serve functions including screening, emphasizing, connecting, creating sheltered spaces, and forming observation areas within spaces (Güney et al., 1995; Uzun, 2007). Outdoor seating units, benches, advertising panels, fountains, trash bins, kiosks, signage boards, and similar elements are considered as furnishing elements in outdoor spaces. Furnishing elements designed for individual use contribute to visual richness with their colors and forms while providing comfort to users (Güney et al., 1995). One of the significant factors influencing the attractiveness of shopping centers is the implementation of satisfactory infrastructure. In landscape design, important infrastructure works for shopping centers include transportation and parking. It is necessary to design a parking area with sufficient capacity for visitors' vehicles (Özkan & Küçükerbaş, 1995).

## **2. Methodology**

A literature review was conducted exploring both scientific and grey literature including academic theses, scientific articles, projects, books, recent reports prepared for shopping centers, translations from foreign sources, and other printed publications. The review helped us to determine the scope of the primary research. Accordingly, selected shopping centers from Turkey and around the world were examined in terms of design criteria, with an attempt to determine their adequacy both qualitatively and quantitatively. As a method of primary data collection, a questionnaire was prepared and administered to shopping center users. The design and planning criteria of the selected sample shopping centers were investigated, and design criteria, landscaping elements used, and reasons for preference were investigated using a comparative method. Shopping center landscape design was analyzed concerning the natural and structural elements used.

### *2.1. The Universe and Sample of the Study*

The research encompasses consumers who frequently attend shopping centers in Turkey. Due to limitations stemming from time, expenses, and pandemic circumstances, the research sample comprises 586 consumers who are patrons of shopping centers. The snowball sampling technique was employed in this study. It is worth noting that this technique concentrates on critical scenarios and individuals from whom comprehensive data can be acquired, and access to the population was achieved by tracking these pivotal scenarios and individuals (Creswell, 2013). The snowball sampling technique is employed when information about the population is lacking or access to the units constituting the population is challenging (Patton, 2005). In this research, one of the reasons for choosing this technique is the assumption that the sample should predominantly consist of the educated segment, given their presumed higher attention to environmental conditions and design. Korhonen and Lappalainen's study concluded that education plays a significant role in creating environmental awareness (Korhonen & Lappalainen, 2004). This research was conducted in 2021 across three major cities in Turkey: Istanbul, Ankara, and Izmir. It included a total of nine shopping centers, with three in each city, and targeted a randomly selected sample of 586 users. It was deemed sufficient for the participants to have used the designated shopping centers to respond to the survey.

### *2.2. Assumptions and Limitations*

It is assumed that the survey participants answered the questions sincerely and candidly. The sample of the study is assumed to represent the population. Additionally, it is assumed that the survey can reveal the expectations of consumers regarding landscape design in shopping centers. The most significant limitation of the study is that, due to the pandemic, the survey could not be conducted in a face-to-face format. Therefore, the survey was conducted online using Google Forms.

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### 2.3. Data Collection Instrument

In the study, a survey form consisting of two sections was used as the data collection instrument, which was created by the researcher. The first section of the survey form aims to obtain data related to participants' demographic information and consists of a socio-demographic information form. This form includes 4 questions that aim to determine participants' age, gender, educational status, and employment status. The second section of the survey form consists of 14 questions aimed at determining the factors influencing participants' preferences for shopping centers, their expectations regarding landscape design, and the impact of preferences on landscape design.

### 2.4. Data Analysis

The first section of the survey questions created to evaluate consumer expectations regarding landscape design in shopping centers includes questions about participants' demographic information. In the second section of the survey, there are general questions aimed at determining consumers' preferences in landscape design in shopping centers, as well as questions that can be evaluated specifically for the preferred shopping center. To analyze the data in order to understand how the elements used in landscape design influence consumers' shopping center preferences and to evaluate their expectations, statistical methods were employed using the SPSS 22.0 software package. Percentage values were used for data interpretation. To test whether participants' preferences for landscape design in shopping centers differ by age, one-way analysis of variance (ANOVA) was conducted. Descriptive analysis method was used for the question in the survey where participants' opinions were sought.

## 3. Results

### 3.1. Demographic Overview

The findings related to the socio-demographic information of the 586 participants who participated in the survey (gender, age, educational status, employment status) are presented in Table 1. All participants completed all the questions in the form.

**Table 1** Participants' Demographic Information

Socio-Demographic Characteristics of Survey Participants	Options	Frequency (f)	Percentage (%)
Gender	Female	350	59,7
	Male	236	40,3
Age	18-25	76	13,0
	26-35	117	20,0
	36-45	139	23,7
	46-55	199	34,0
	55 and over	55	9,3
Education Level	Primary School	-	-
	Secondary School	3	0,4
	High School	37	6,4
	Associate's Degree	38	6,5
	Bachelor's Degree	354	60,4
	Master's Degree / Ph.D. (Doctorate Degree)	154	26,3
Employment Status	Employed	399	68,1
	Student	60	10,2
	Housewife / Not employed	54	9,2
	Unable to work due to disability and/or chronic health issues	-	-
	Retired	55	9,4
	Other	18	3,1

### 3.2. Shopping Habits of the Participants

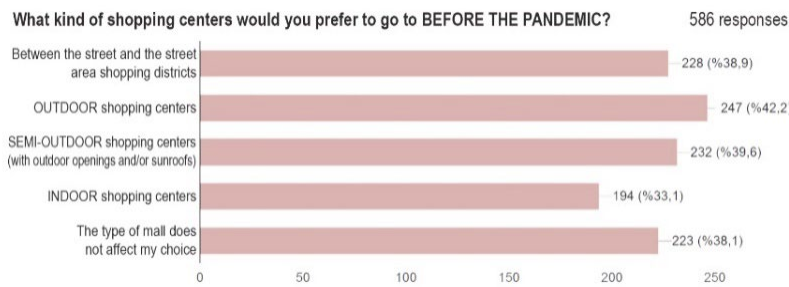
A table below summarizes participants' shopping habits before and after the pandemic (Table 2).

**Table 2** Frequency and Percentage of Participants' Visits to Shopping Centers

	Options	Frequency (f)	Percentage (%)
How often did you go to shopping centers?	Every few months	107	18,3
	Several times a month	180	30,7
	Once in a month	105	17,9
	Once a week	123	21
	Multiple times a week	71	12,1

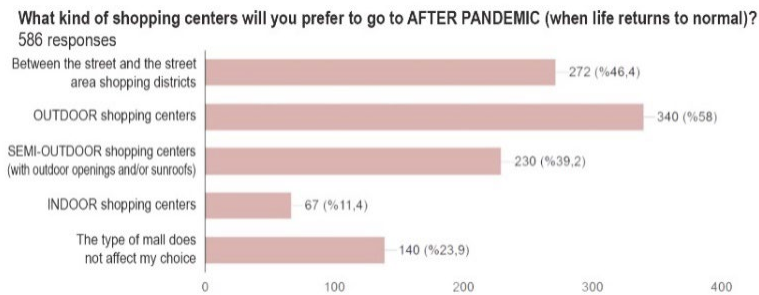
The data presented in Table 2 reveals that participants frequently visit shopping centers, with the majority indicating several visits per month. It is noteworthy that all 586 participants responded to this question.

In terms of the primary purpose behind participants' visits to shopping centers, the predominant motivations are shopping and dining, as indicated by their responses. It is worth noting that all participants (n=586) provided answers to this survey question.



**Figure 1** Participant preferences for shopping center types before the pandemic

The results presented in Figure 1 indicate that there was no notable differentiation in participants' preferences for shopping center types prior to the pandemic. It is worth noting that this question was answered by all participants (n=586) in the survey.



**Figure 2** Likely participant preferences for the shopping center type after the pandemic

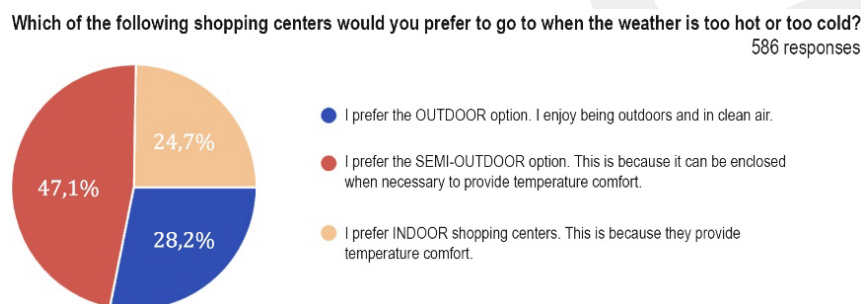
From the findings presented in Figure 2, it can be inferred that participants will predominantly prefer open-air shopping centers after the pandemic. Additionally, it is noteworthy that participants will choose enclosed shopping centers to a lesser extent. It should be noted that all participants (n=586) responded to this question in the survey.

The findings regarding participants' responses to the question "Do you think the number of open-air shopping centers will increase after the pandemic, as shown in the photo below?" are displayed in Figure 3.



**Figure 3** Proportions of respondents based on their opinion on whether the number of shopping centers will increase after the pandemic

From the results presented in Figure 3, it can be observed that participants predominantly expressed the belief that outdoor shopping centers will increase in prominence following the pandemic, and their expectations align with this perspective. It should be noted that all participants (n=586) responded to this question in the survey.



**Figure 4** Participant preferences of the shopping center type during hot and cold weather

From the findings in Figure 4, it can be inferred that participants would predominantly prefer semi-outdoor shopping centers when considering weather conditions. It should be noted that all participants (n=586) responded to this question in the survey.

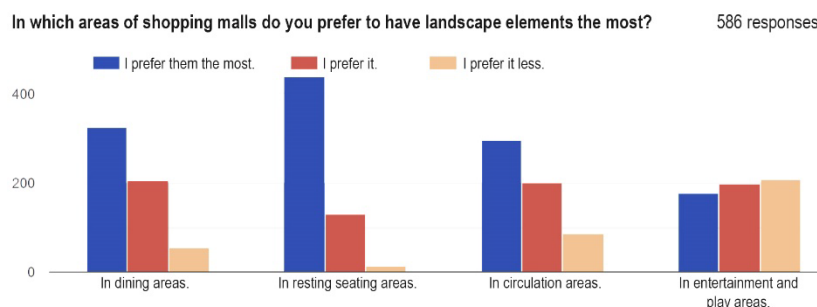
### 3.3. Findings Regarding Participants' Views on Landscape Design

A table below summarizes participant shopping center preferences based on presence of landscape design elements (Table 3).

**Table 3** Participant Shopping Center Preferences Based on Presence of Landscape Design Elements

	Options	Frequency (f)	Percentage (%)
The preference for shopping centers based on landscape elements.	Yes	469	80,0
	No	117	20,9

The findings from Table 3 suggest that the presence of landscaping elements such as plant design, decorative fountains, benches for relaxation, and other landscaping elements is effective in participants' shopping center preferences. It can be concluded that landscaping elements are among the important criteria in shopping centers. It should be noted that all participants (n=586) answered this question in the survey.



**Figure 5** Participant preferences for landscaping elements by different areas of shopping centers

The findings from Figure 5 suggest that the use of landscaping elements in relaxation and seating areas within shopping centers is of particular importance. This question was answered by all participants (n=586) in the survey.

**Table 4** Summary of Participant Shopping Center Preferences

Upper-Middle Income Group Shopping Centers		Middle Income Group Shopping Centers		Middle-Low Income Group Shopping Centers	
Zorlu	İstanbul/2013	Kanyon	İstanbul/2006	Meydan	İstanbul/2007
Number of Stores	205	Number of Stores	143	Number of Stores	170
Parking area	2200 Cars	Parking area	2300 Cars	Parking area	5000 Cars
Total Construction	105.000 m <sup>2</sup>	Total Construction	37.500 m <sup>2</sup>	Total Construction	55.000 m <sup>2</sup>
Next Level	Ankara/2013	Kentpark	Ankara/2009	Metromall	Ankara/2017
Number of Stores	145	Number of Stores	236	Number of Stores	200
Parking area	3000 Cars	Parking area	3000 Cars	Parking area	3000 Cars
Total Construction	42.000 m <sup>2</sup>	Total Construction	224,399 m <sup>2</sup>	Total Construction	450,000 m <sup>2</sup>
Hilltown	İzmir/2019	Forum Bornova	İzmir/2006	Mavibahçe	İzmir/2015
Number of Stores	200	Number of Stores	128	Number of Stores	230
Parking area	2750 Cars	Parking Cars	3000 Araç	Parking area	2000 Cars
Total Construction	68.000 m <sup>2</sup>	Total Construction	200.000 m <sup>2</sup>	Total Construction	165.000 m <sup>2</sup>

Table 4 summarizes general information about the participants' most preferred shopping centers, including Kentpark / Ankara, Kanyon / İstanbul, Forum Bornova / İzmir, Zorlu / İstanbul, MaviBahçe / İzmir, Next Level / Ankara, Metromall / Ankara, Hilltown Karşıyaka / İzmir, and Meydan / İstanbul. This table was prepared by the researcher based on information obtained from the shopping centers' websites.

The participants primarily preferred shopping centers that were accessible by car. Furthermore, factors such as the presence of their favorite stores, the shopping center's operating hours, whether it was semi-outdoor or outdoor, and their satisfaction with the landscape design were among the reasons for their preferences. Consequently, it can be inferred that participants' satisfaction with the landscape design could significantly influence their choice of a shopping center.

The findings indicate that participants predominantly preferred plants as landscaping elements in shopping centers. Plants were followed by seating, resting units, water features, artistic elements, ground coverings, and overhead elements in their preferences. Therefore, it can be inferred that, in terms of consumer preferences, plants or natural elements play a significant role in shopping mall landscape design.

The findings indicate that the water feature was the landscaping element that predominantly caught the participants' attention in shopping centers. Additionally, it can be stated that participants primarily preferred natural designs in shopping centers based on the results. This demonstrates that natural landscape designs in shopping centers are preferred by consumers to a greater extent and align with their expectations during their visits to these centers.

**Table 5** Participant Shopping Center Preferences by Gender Before and After the Pandemic

Before the pandemic	Female	Male	Total
Street and sidewalk spaces	179	49	228
Outdoor	124	123	247
Semi-Outdoor	136	96	232
Indoor	108	86	223
After the pandemic			
Street and sidewalk spaces	191	81	272
Outdoor	226	114	340
Semi-Outdoor	161	69	230
Indoor	48	19	67

According to the findings in Table 5, it can be interpreted that participants, based on gender variable, preferred all types of shopping centers at relatively similar rates before the pandemic. Additionally, it can be stated that female participants visited shopping centers more frequently than males. From the findings, it can be observed that, after the pandemic, female participants predominantly preferred outdoor shopping centers, followed by street shopping areas, semi-

outdoor, outdoor, and indoor shopping centers. Male participants, on the other hand, predominantly preferred out-door shopping centers after the pandemic, followed by street shopping areas, semi-outdoor, and indoor shopping centers. The findings indicate that, after the pandemic, participants based on gender variable tended to prefer street shopping areas, semi-outdoor, and outdoor shopping centers more, and visited indoor shopping centers less. This situation can be interpreted as participants being reluctant to be in indoor environments to feel safer during the pandemic. Additionally, it can be said that, after the pandemic, street shopping areas, semi-outdoor, and outdoor shopping centers are more likely to be preferred by people compared to indoor shopping centers.

**Table 6** Participant Attention to Landscape Elements in Shopping Centers by Gender

Landscaping Elements in Shopping Centers	Female	Male	Total
Seating and Resting Units, etc.	196	155	351
Plants	221	152	373
Water Elements (Decorative Ponds, Fountains)	193	106	299
Artistic Elements (Sculptures, Reliefs, etc.)	105	120	225
Covering Elements (Shade Structures, Pergolas, etc.)	69	66	135
Flooring materials	98	94	192

According to the findings in Table 6, female and male participants have primarily preferred plants and seating and resting units as landscaping elements in shopping centers. Gender appears to affect perception of importance of landscape design elements, and shopping centers are not only chosen for shopping and dining activities but also for relaxation and leisure activities.

#### 3.4. Participant Recommendations for New Shopping Centers

At the end of the survey conducted with 586 participants in the study, participants were asked about their design recommendations for shopping centers to be built after the pandemic and their thoughts on whether future shopping centers should undergo changes. Four hundred and twenty responded to this question and provided their opinions. Descriptive analysis method was employed to elucidate the post-pandemic shopping center designs based on the participants' responses.

Participants' foresights regarding the shopping centers to be constructed after the pandemic generally suggest a preference for semi-outdoor and outdoor designs. They emphasize the importance of avoiding overly complex designs, incorporating landscaping elements such as plants and water features, adjusting distances, and prioritizing open areas with circulation. They also indicate that existing shopping centers with these designs would be preferred. In this context, it would be a sound choice for architects to consider consumer preferences in the design of new-generation shopping centers and contribute to making shopping centers an integral part of life even after the pandemic.

## 4. Discussion

Our findings are in concordance with other similar studies. In the study titled "Shopping Malls Attractiveness: A Segmentation Approach" conducted by El-Adly (2007), it was determined that consumers have expectations related to the ease of transportation, sufficient parking capacity, and the presence of comfortable resting areas in the design of shopping centers. Similarly, in the current study, it is observed that participants expect shopping centers to have easy vehicular access, simplicity in design, and comfortable resting areas from an architectural standpoint. Paulins and Geistfeld (2016) revealed that consumer expectations from shopping centers vary according to their educational levels, and consumers have expectations related to ease of navigation and the location of stores.

Also, Cengiz and Özden (2002) found that consumers have expectations from shopping centers, including the presence of dining and cinema areas, sufficient variety of stores, play areas for children, and adequate parking capacity.

In addition to that, Demirci (2000) determined that consumers have expectations from shopping centers that include product variety, the availability of parking facilities, the attractiveness of interior design, and the design of stores and their surroundings.

The study conducted by Altunışık and Mert (2001) also identified consumer expectations from shopping centers, which include having a spacious and modern appearance, easy accessibility, sufficient parking space, comfortable navigation, the presence of children's play areas, and social activity areas. These findings are in line with the data obtained in our study.

In Sakarya's study (1997), it is emphasized that the lighting system at the entrance area of shopping centers and areas with different functions such as circulation and information should be attractive. Therefore, it has been determined that in addition to the general lighting system, the use of local lighting systems for specific areas in the shopping center is important. The study also found that visitors were more likely to respond positively to the adequacy and safety of lighting in indoor parking areas compared to shopping center employees. However, in general, it was concluded that 49% of the participants considered it insufficient and unsafe. This study, which supports the findings of the current research, has identified the significant impact of the lighting system in landscaping on the attractiveness of shopping centers. Similarly, Turhan's study (2007) examines how glass has been influential in spatial and architectural design throughout history. In the context of the use of glass in shopping center design, a visual evaluation of shopping centers has been conducted. As a result, it has been reported that the use of glass in landscaping design has a positive impact on users.

In the study conducted by Şenkal-Sezer et al. (2014), landscaping design practices that adhere to specific criteria were implemented in certain shopping centers, typically using solitary and architecturally structured plant species. As a result of the research, it was determined that there is an unfavorable environment for plant growth due to the lack of sufficient natural light openings in shopping centers and the use of LED, spotlight, and fluorescent lighting instead of greenhouse lighting. Considering the participants' preference for natural designs and, consequently, plants in shopping center landscaping designs, it can be emphasized that an environment conducive to plants should be created in accordance with user preferences.

Landscape design can be defined as the synthesis of science and art where nature and culture converge. In addition to design, it primarily involves work based on scientific data, taking into account natural, ecological, cultural, social, economic, environmental, climatic, technological, and land structure factors. It considers geographical, botanical, and local environmental relationships while aiming for sustainability, innovation, and problem-solving. It also focuses on preserving historical, natural, and cultural values within a legal framework, all while prioritizing the relationship between humans, flora, fauna, and their needs (Demiralp, 2009). In this regard, it should not be expected to achieve successful results in applications where landscape planning stages are not taken into account in urban spaces like shopping malls. Non-compliance with the planning stages can lead to irreversible errors in landscape applications (Helfand et al., 2006; Taib & Abdullah, 2012; Özer & Barış, 2013; Kim et al., 2014). In addition to landscape work that aligns with user preferences in shopping centers, it is considered important to design landscaping in line with planning. The results obtained through the survey application and analysis conducted in the study, as well as the recommendations developed by the researcher based on these results, are provided below.

Shopping centers offer a distinct proposition to consumers, aiming to foster extended visits and shopping activities. To achieve this, these spaces should facilitate social gatherings, leisure activities such as gaming, dining, relaxation, and seating. Moreover, they should incorporate thematic areas tailored to specific interests, provide opportunities for sporting activities, and offer informative environments. Consequently, there is merit in designing shopping center landscapes in a manner that aligns with contemporary demands and captivates the interest of consumers.

The selection of the location for a shopping center should begin with a thorough evaluation of environmental factors, considering elements such as transportation and parking that can be

designed to attract consumers effectively. In a sense, the shopping center should coexist harmoniously with the urban environment. In the landscape design of shopping centers, simplicity should be favored over complexity, ensuring straightforward placement of stores and ease of circulation. The importance of landscape design for shopping centers is evident from the results of our study. It can be said that struggling or declining shopping centers can be revitalized with new landscape additions that align with user preferences. However, since this is not the primary focus of the study, it has not been extensively addressed in its content.

The acceptance of a shopping center by consumers hinges significantly upon the quality of its landscape design. Therefore, the design must fulfill consumer expectations and needs, while simultaneously providing an enjoyable experience within its confines. Landscape design should incorporate aesthetic elements like flora, water features, and lighting, all of which contribute to establishing an atmosphere of naturalness and spaciousness in communal areas. In the realm of shopping center landscape design, meticulous attention should be paid to the synergy among different spatial components. The design should convey to visitors that they can find aspects of themselves within the shopping center, maintain a design ethos closely aligned with natural elements, and nurture symbolic imagery, including a sense of belonging and identification with fellow visitors. Consequently, cultivating a sense of belonging and enabling consumers to perceive themselves as an integral part of the whole are essential objectives. Shopping center landscape design should also take local climate conditions into consideration and favor designs that are climate-appropriate. Furthermore, it should ensure a seamless integration of interior and exterior spaces. In the architectural design of a shopping center, it is essential to delineate the target demographic and formulate the design and spatial arrangements accordingly. Recognizing that the influence of landscape elements within the shopping center may not be uniformly distributed among all users; the establishment of design criteria should align with shared characteristics, aesthetic inclinations, expectations, and requisites of the prospective users. The selection of the target demographic necessitates a thorough consideration of variables such as the residents' lifestyles, individual preferences, and socio-economic standings in the vicinity where the shopping center is located, allowing for purposeful categorization.

In landscape design, it is imperative to create an environment that not only caters to the physical needs of users but also places significance on technological infrastructure. This approach ensures that users feel comfortable and secure within the designed space. It is recommended that the design process of shopping center projects involve collaboration between architects, landscape architects, and interior designers from the very beginning, embracing an interdisciplinary approach. Such collaboration enables various disciplines to interact and contribute their expertise to the design process effectively. In landscape design, the preference should lean towards ecologically sensitive designs, where users can encounter fragments of the urban identity that reflect the city's character while also providing them with enjoyable spaces where they can feel a connection to the natural environment.

Shopping centers, in addition to being retail spaces, have evolved into multifaceted environments with various themes and social and cultural functions, catering to the needs of contemporary individuals. These spaces offer users the opportunity to engage in numerous activities and provide socialization opportunities. Therefore, the landscape design of shopping centers should be carried out with consideration of evolving needs over time.

The pandemic period has shed a clearer light on the role of shopping centers in people's lives. During the quarantine measures, as shopping shifted to online platforms, discussions and predictions about the future of shopping centers emerged. However, in line with the findings obtained from this study, it can be emphasized that shopping centers are not merely structures encompassing stores. They are social gathering spaces for consumers, characterized by environmentally friendly designs and the optimal utilization of technology. Despite the significant shift of shopping to the online realm, it is evident that people have not abandoned their preference for in-person interactions and coming together. Therefore, it can be predicted that shopping

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centers designed to meet consumers' expectations have the potential to be a source of happiness for everyone.

The pandemic has taken shopping centers by surprise, as it has in all sectors. Adapting to such a situation, ensuring the necessary conditions, and attracting consumers necessitate a strong emphasis on hygiene, along with the provision of natural environments to consumers. This entails not only delivering the pleasure of shopping but also providing social and cultural activities that yield the desired level of satisfaction, thereby stimulating the inclination of consumers to revisit. Structures conceived as shopping centers should strive to create experiences that are etched in the memory of individuals, enabling them to spend joyful moments and, most importantly, kindling the aspiration for a return visit. In this regard, it is of paramount importance to prioritize the design of next-generation shopping centers by drawing instructive insights from the pandemic. Innovative solutions should be devised within the design framework to craft shopping centers adaptable to the post-pandemic era. It is evident that shopping centers failing to align with the altered lifestyles of individuals will not enjoy the same level of demand as before. Architects should contemplate the lessons learned from the pandemic and introduce more imaginative solutions in the design of next-generation shopping centers. Furthermore, it can be anticipated that the designs of previously established shopping centers could be enhanced through aesthetic refinements. The design of shopping centers, which address a wide spectrum of society and are adaptable to any potential events or circumstances that may affect or have the potential to influence society, is regarded as an essential societal imperative.

In anticipation of the pandemic-induced transformation, shopping centers are poised to undergo an evolution that aligns more closely with the innate characteristics of human behavior. These centers are expected to maintain their status as alluring hubs, serving not only as venues for satiating shopping desires but also as focal points for social and cultural activities. It can be asserted that a new phase will commence post-pandemic, marked by the integration of shopping centers into the daily lives of individuals. These centers, which can be perceived as communal spaces where people congregate, must be equipped to provide uninterrupted services under all circumstances and adversities.

## **5. Conclusion**

The aim of this study was to reveal the effects of landscape design in shopping centers on consumers, evaluate changes in landscape design, and determine the criteria and expectations of consumers in landscape design. In the context of this study, we came up with four hypotheses. Our findings confirmed all these hypotheses. First of all, we found that visitors pay attention to landscape design in their preferred shopping centers. Especially in shopping centers, elements such as plants, water features, amenities, art elements, small trees and shrubs, ground cover plants, seasonal flowers, floor coverings, and covering elements attract visitors' attention. Visitors enjoy being in shopping centers with landscape designs they like, and they mention that being in such an environment brings them peace. These findings support our first hypothesis that landscape design in shopping centers directly affects visitors psychologically. Secondly, we found that different landscape elements are used depending on the type of shopping center, with a greater emphasis on natural landscape elements in outdoor shopping centers, and visitors' preferences align with this. This confirms our second hypothesis that landscape elements used in design vary according to the type of shopping center (indoor, semi-outdoor, outdoor). In addition to that, our study revealed that consumers prefer outdoor or semi-outdoor shopping centers with natural elements in landscape design, providing a spacious and comfortable environment. Considering the pandemic period, it is observed that visitors prefer outdoor and semi-outdoor shopping centers more and tend to avoid indoor shopping centers. These findings indicate that visitors to shopping centers make their choices based on landscape design, supporting our third hypothesis. Finally, we found that survey participants place particular importance on landscape design in circulation areas and

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dining areas. Thus, it is highly likely that for shopping center visitors landscape design is most important in circulation areas and dining areas, which confirms our fourth hypothesis.

The findings of our study have practical implications for shopping center design in post-pandemic era, indicating a clear need for incorporation of landscape design elements, especially plants and water features, into these facilities. Also, shopping center visitor preferences indicate the need for transition in shopping center design towards semi-outdoor or outdoor types. Future research is needed to determine how different social, cultural, economic and environmental conditions may affect consumer preferences as regards to shopping center types and design.

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## Resume

Özlem Nur Aslantamer completed her Ph.D. in Landscape Architecture at the School of Natural and Applied Sciences, Ankara University, in 2021. With 26 years of combined experience in academia and the professional field of interior architecture & environmental design, she has established a robust foundation in her field. Since 2021, she has been serving as a full-time instructor at Atılım University, dedicating her expertise to both teaching and research endeavors.

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