THE CHANGE OF UNIVERSITY STUDENTS' PLACE ATTACHMENT IN PUBLIC SPACES DURING THE COVID-19 PANDEMIC: A CASE STUDY ON THE MIDDLE EAST TECHNICAL UNIVERSITY CAMPUS

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ABSTRACT

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With the SARS-CoV-2 virus, which emerged in Wuhan in December 2019 and spread rapidly all over the world in a short time, there have been significant changes in people's lives. As in the rest of the world, quarantine, restriction, and social isolation measures were implemented to control the spread of the virus in Turkey. Within these measures, mobility was restricted, and people had to stay home. University students have taken their place in society as a mobile and social group. Restrictions, quarantines, and social isolation measures introduced during the COVID-19 pandemic have restrained/reduced this mobility and social interaction and activities. With these restrictions, their relationships with social life have weakened considerably. This has negatively affected their relationships with the places they are attached to in their daily lives. With the pandemic, public spaces could not be used efficiently in Turkey, and the rest of the world, and the ties with these spaces were inevitably affected. This thesis aims to examine and evaluate the change in the place attachment of university students to open public spaces on Middle East Technical University campus during the COVID-19 pandemic. In the

theoretical part, the concepts of place attachment and public space were investigated in depth, and the parameters affecting place attachment in public spaces were determined. Also, the studies on place attachment and the use of public space during the COVID-19 period were examined. The case study investigated students' attachment to open public spaces on the METU campus and whether this attachment changed during the COVID-19 period by surveying 60 respondents. The answers have been analyzed with content analysis and descriptive statistics. According to the results of the survey, it was determined that the attachment of 57% of the respondents to the open public spaces on the METU campus decreased during the COVID-19 period. The parameters that affect this decrease are frequency of use (29%), interaction and activities (29%), sense of security (20%), length of engagement (13%), accessibility (8%), and physical attributes (3%) in descending order in terms of their percentages.

Keywords: Place attachment, Place, Public space, COVID-19

ÖZ

COVID-19 PANDEMİSİ SIRASINDA ÜNİVERSİTE ÖĞRENCİLERİNİN KAMUSAL ALANLARDAKİ YER BAĞLILIKLARININ DEĞİŞİMİ: ORTA DOĞU TEKNİK ÜNİVERSİTESİ KAMPÜSÜ ÖRNEĞİ

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Aralık 2019'da Wuhan'da ortaya çıkan ve kısa sürede tüm dünyaya hızla yayılan SARS-CoV-2 virüsü ile birlikte insanların hayatında önemli değişiklikler meydana gelmiştir. Dünyanın geri kalanında olduğu gibi Türkiye'de de virüsün yayılmasını kontrol altına almak için karantina, kısıtlama ve sosyal izolasyon önlemleri uygulandı. Bu önlemler kapsamında hareketlilik kısıtlanmış ve insanlar evlerinde kalmak zorunda kalmıştır. Üniversite öğrencileri mobil ve sosyal bir grup olarak toplumda yerlerini almaktadır. COVID-19 pandemisi sırasında getirilen kısıtlamalar, karantinalar ve sosyal izolasyon önlemleri bu hareketliliği, sosyal etkileşimi ve faaliyetleri sınırlamış/azaltmıştır. Bu önlemlerle birlikte öğrencilerin sosyal hayatla ilişkileri oldukça zayıflamıştır. Bu durum günlük yaşamlarında bağlı oldukları mekanlarla olan ilişkilerini de olumsuz etkilemiştir. Salgınla birlikte dünyanın her yerinde olduğu gibi Türkiye'de de kamusal alanlar verimli bir şekilde kullanılamamış ve bu alanlarla olan bağlar ister istemez etkilenmiştir. Bu tez, COVID-19 pandemisi sürecinde üniversite öğrencilerinin Orta Doğu Teknik Üniversitesi kampüsündeki açık kamusal alanlara olan yer bağlanmalarındaki değişimi incelemeyi ve

değerlendirmeyi amaçlamaktadır. Teorik kısımda yer bağlılığı ve kamusal alan kavramları derinlemesine incelenmiş ve kamusal alanlarda yer bağlılığını etkileyen parametreler belirlenmiştir. Ayrıca COVID-19 döneminde mekana bağlılık ve kamusal alan kullanımı üzerine yapılan çalışmalar incelenmiştir. Vaka çalışması, öğrencilerin ODTÜ kampüsündeki açık kamusal alanlara olan bağlılıklarını ve bu bağlılığın COVID-19 döneminde değişip değişmediğini bir anket uygulayarak araştırmıştır. Cevaplar içerik analizi ve betimleyici istatistiksel analiz yöntemleri ile analiz edilmiştir. Anket sonuçlarına göre, COVID-19 döneminde ankete katılanların %57'sinin ODTÜ kampüsündeki açık kamusal alanlara bağlılığının azaldığı belirlenmiştir. Bu azalmaya etki eden parametreler yüzdelerine göre azalan sırada olarak: kullanım sıklığı (%29), etkileşim ve aktiviteler (%29), güvenlik duygusu (%20), etkileşim süresi (%13), erişilebilirlik (%8) ve fiziksel nitelikler (%3) olarak ortaya çıkmıştır.

Anahtar Kelimeler: Yer Bağlılığı, Yer, Kamusal Alan, COVID-19

To my mother, father, sister, and Tarçın…

…for all their love and support…

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CDC: Centers for Disease Control and Prevention

COVID-19: Coronavirus Disease of 2019

MERS-COV: Middle East Respiratory Syndrome Coronavirus

METU: Middle East Technical University

SARS: Severe Acute Respiratory Syndrome

WHO: World Health Organization

CHAPTER 1

INTRODUCTION

1.1 Definition of the Problem

Public spaces are unique urban places where citizens can freely create themselves, meet, interact with each other and places, and socialize. Public spaces are significant components of the built environment that may improve a sense of belonging and sense of place by enabling encounters between people (Carr et al., 1992). Open public spaces are capable of not only enabling users to establish strong bonds with the place but also, in certain cases, they may cause damage to existing bonds and loss of sense of place. One of the current discussion issues in this regard is place attachments in public spaces. Today, architects and urban designers are concerned with the concept of place associated with identity and attachment. Place attachment can be defined as a positive emotional bond to a specific place, an emotional relationship established with that place. It is also affected by the cultural and social values of places (Ujang et al., 2018). While the expression 'attachment,' which is emphasized in the notion of place attachment, refers to the affect, place refers to the physical settings in which this emotional and cultural bond is formed (Altman & Low, 1992). Place attachment has been discussed and explained with socio-demographic variables such as age (Gustafson, 2009; Lewicka, 2008; Shamai & Ilatov, 2005), gender (Gustafson, 2009; Hidalgo & Hernández, 2001; Lewicka, 2008; Rollero & de Piccoli, 2010; Scannell & Gifford, 2017a), education and economic level (Lewicka, 2008; Scannell & Gifford, 2010b), residence time (Bonaiuto et al., 1999; B. Brown et al., 2003; Gustafson, 2009; Hay, 1998; Kasarda & Janowitz, 1974; Lalli, 1992; Lewicka, 2005, 2010; Shamai & Ilatov, 2005), and mobilization (B. Brown & Perkins, 1992), and social relations related to the place (Bonaiuto et al., 1999; Chow & Healey, 2008; Kasarda & Janowitz, 1974; Lewicka, 2005, 2010,

2011; Mesch & Manor, 1998). Also, the physical and environmental characteristics of the place (Bonaiuto et al., 1999; Hidalgo & Hernández, 2001; Lewicka, 2011) are effective in attachment to the place.

In December 2019, in the city of Wuhan, China, it was announced by authorized organizations that a new type of virus had emerged, which scientists had not encountered before. It has penetrated people's lungs and made it difficult to breathe, and at the same time, symptoms such as fever, weakness, cough, and muscle pain emerged. Considering that there is currently no vaccine or an effective drug against this newly encountered virus and that the necessary and adequate measures are not fully taken globally, it has become inevitable that the virus will spread to the entire world. Also, it becomes a pandemic in a short time in today's global world where there is intense human circulation. Population densities of cities have been decisive in the spread of COVID-19. So much so that while the probability of contracting the virus is high in the densely populated districts of the same city, this probability is lower in districts with low population density because the transmission route of the disease occurs from person to person through droplets. In big cities, it has been inevitable for children, young people, and the working population to come together. Compulsory going to markets, meeting for socialization, and going to workplaces increased the possibility of contagion (Çam, 2020).

Although the strength of the disease seems to have weakened now, the COVID-19 process is still ongoing, and many people are still infected every day. The global epidemic has been changing and transforming daily life practices in living and working environments and urban public spaces. At the beginning of the COVID-19 process, between March and June 2020, public spaces remained empty within the framework of the measures taken because of the increase in cases. Moreover, society was unaware of what kind of situation it was faced with. Similar to the world, public spaces in Turkey could not be used due to the feelings of uncertainty people experience in the face of COVID-19 and the precautions taken.

While public space is defined as space that provides casual encounters through social interactions with people, new spatial organizations, and events are started to develop in the virtual environment with the pandemic. COVID-19 changed the physical public space through the online platforms created. In this study, the perception of public space in online platforms was not examined, and the relationship between virtual public space and attachment can be investigated in further studies.

Before the COVID-19 pandemic, mobility was much more significant, and people lived a life of abundant activity, where they could travel wherever they wanted. After the quarantine and restrictions implemented in Turkey as well as the measures taken worldwide, this mobility has changed significantly for many people. One of the groups most affected by these restrictions was university students. University students are often a mobile and social part of the population. In line with the COVID-19 pandemic, the measures taken and the restrictions imposed on activities and events have adversely affected this mobility and sociality. These measures include curfews, quarantines, and the closure of non-essential places, schools, and universities. In many universities, education has moved to online platforms, and face-to-face training has been suspended. Therefore, the lives of students have changed drastically. Suddenly, they were restricted in their movements. Favorite destinations and meeting points have disappeared for these students, who were mobile and had wide networks before. The places where students prefer to go have been affected at least as much as other age groups of the population due to the curfews. Frequent places for students are closed as part of quarantine restrictions. As universities and the places where students gather for activities are closed, it is assumed that their places of belonging have decreased. Although social distancing measures intend to slow the spread of the virus and protect public health, they have also significantly caused social isolation and affected students' psychological and mental health. According to Ammar (2020), students' symptoms of mood states such as stress, anxiety, feelings of loneliness, and depression increased rapidly during the pandemic process. Spending a large part of the day, sometimes even the whole of it, at home, in a closed environment negatively affects social participation and life

satisfaction. Being at home all the time and not being able to go to the places they used to cause an increase in their longing for those places.

By the specific conditions and difficulties they experienced during this period, university students were chosen as the focus group in this study. Their attachment to public spaces and how this changed during the pandemic have been examined. University students often spend time on the university campus and develop a bond with these public spaces by experiencing them. It has been revealed that students prefer open public spaces (building verandas) (Talischi & Rezaei, 2019) front yards of the faculty buildings, and open public spaces available for common use (Hanan, 2013). In this research, the Middle East Technical University campus was studied. The public spaces on this campus are significant and productive for such research in many respects, for reasons such as containing different physical elements, allowing social activities and cultural events, allowing people to spend a long time together and being convenient in terms of accessibility. METU Ankara campus has been an essential part of the social and cultural opportunities and activities offered along with the education given at the university since 1963 (Büyükcivelek et al., 2016). With more than 28000 students (Middle East Technical University, n.d.) from different religions, languages, and races from various cultures, METU has a campus with extensive event venues and open public spaces. In addition, due to the number of dormitories on campus during the COVID-19 period, many students have been accommodated on campus. Because of all these, the METU campus was found suitable for this study. The reason for choosing open public spaces as the type of space is that they are places where students' socialization needs are met, and the intensity of use of open public spaces during the COVID-19 period.

1.2 Significance of the Study

The COVID-19 pandemic is still an ongoing period, and it is foreseen that it will not end for a while. It is believed that this period witnessed very sharp results, and it completely changed the perception of attachment to the place and should be

redefined. University students, who were highly social and mobile before, switched to the online education system within the measures taken and locked themselves in their homes for a while. For this reason, their relationship with the place has been dramatically affected. The change in the experiences of these students in public space and their attachment to the place during the COVID-19 period is important because it will be one of the first examples in the literature. There are not many studies on the place attachment of university students in Turkey. As far as is known in the literature, there is no study focused on the place attachments of students in Ankara. Like all other studies conducted during the pandemic, this study will shed light on similar scenarios in the future. The thesis will guide the campus planning, which will be made by considering the place attachment -especially for situations like a pandemic-.

1.3 Methodology of the Study

This thesis investigated the following main research question; how does the COVID-19 pandemic affect university students' place attachment to public spaces? This research question comprises two sub-questions: what the effective parameters of place attachment in public spaces at METU are and whether the university students' place attachment to public spaces changed during the COVID-19 pandemic. The data of this study has been obtained from a survey applied to 60 students on the METU campus. For both research questions, a mixed research approach which includes qualitative, and quantitative research approaches, was used. For the qualitative research approach, data were collected via open-ended questions and analyzed with content analysis. For the quantitative research approach, close-ended (multiple choice) questions were used as a data collection method, and answers were analyzed via descriptive statistics. Also, although it was not used as one of the main research methods of the study, observation was used to select the survey areas and to interpret and evaluate the survey results.

1.4 Description of the Study

In Chapter 1, after giving a short introductory text about the COVID-19 pandemic, information is given about how the lives of university students, like all age groups, were adversely affected by the measures taken due to COVID-19. It was mentioned that students' relationships with the places they spent time were disrupted, and the use of public spaces decreased during the COVID-19 pandemic.

Chapter 2 provides in-depth research on the concept of place attachment, which is the main subject of the study, by mentioning the concepts of place and place identity, which are also discussed together with place attachment. Place attachment dimensions, psychological benefits, and variables that affect and predict place attachment are mentioned. The literature has been thoroughly searched, and the researched factors affecting place attachment are summarized with their sources. The place attachment at different place scales is also addressed.

Chapter 3 presents the concept and definitions of public and public spaces, types of public spaces, characteristics of public spaces, and the functions that public spaces provide. The relationship between place attachment and public space has been analyzed, and recent studies on place attachment in public spaces have been evaluated.

Chapter 4 provides extensive background on the COVID-19 pandemic. How the people-place relationship is affected, and the disruption of the place attachment is investigated following the protest, despair, and detachment stages. Finally, it is mentioned how public spaces and their uses have changed during the COVID-19 period.

In Chapter 5, the study area and methodology of the thesis are explained. First, brief information is given about the study area, the METU campus. It then presents the two main sub-questions of the research and a brief overview of the research

approaches used. Then, data collection, the survey, its content, and the respondents are described. Finally, the analysis methods used in this study are mentioned.

In the sixth chapter, the research findings are presented and discussed. And in the last chapter of the thesis, a summary, conclusions, and recommendations are given.

CHAPTER 2

PLACE ATTACHMENT

2.1 Place

Undifferentiated spaces are turned into places where individuals interact socially with them, get to know them better, and give them meaning. Conceptual knowledge about a place can be obtained in a partially short period. On the other hand, it takes a longer time to get the "feel" of a place. This feeling mainly consists of everyday life experiences over the years (Tuan, 1977). For this reason, staying in a place for a long time develops the place identity and strengthens social ties with the place. However, the quality and intensity of the experiences and the duration are also effective on them (Jack, 2010).

The place is a multidisciplinary concept that can be studied in different fields of science such as geography, philosophy, architecture, urban studies, etc. “Places are fusions of human and natural order and are significant centers of our immediate experiences of the world” (Relph, 1976). Therefore, they are full of meanings, real objects, and ongoing activities. They are significant sources of individual and communal identity. They are also significant centers where people develop deep emotional and psychological bonds (Relph, 1976). The experiences of the place can vary on different scales. However, they are whole entities that consist of natural or man-made objects, activities, functions, and meanings. As Tuan asserts (1974 in Hashemnezhad et al., 2013), a place without people becomes just a geographical location, and the concept of place can make sense only with human existence. Hashemnezhad et al. (2013) describe the place by referring to Tuan (1977) in two ways; the first one is general symbols related to the spatial structure of the place, and the other one is the experiences of people which are associated with people's daily

life experiences. He named the second definition a place. Therefore, it can be understood that the place is significant since it refers to a mental, emotional, or cognitive connection between people and their environment.

As Lynch (Lynch, 1990) cited:

> Places in town should have a strong visual identity: be visually differentiated from other places, recognizable, memorable, and vivid. Every place cannot be radically different from every other: important centers and avenues may be unique, but most places will vary only subtly. This quality of identity -a sense of place- is a cornerstone of a handsome environment. Without it, an observer can make no sense of the world since he cannot distinguish or remember its parts. With it, he can begin to make relations; he has a visible basis for a sense of belonging; he can savor the uniqueness of places and people. (p. 295)

2.2 Place Identity and Place Attachment

The concept of spatial identity was first defined in Proshansky's article "The City and Self-Identity" (1978). He focused on the identity of the place instead of the positive and negative effects of city life on human behavior by criticizing previous studies conducted by other authors. Proshansky (1978) explained place identity as the definition of personal identity through a combination of conscious or unconscious ideas, beliefs, feelings, preferences, values, goals, behavioral tendencies, and skills concerning the physical environment. The socialization process of a child, which starts with the family and continues with education, membership in the ethnic group, and social class, contributes to the formation and development of self-identity due to the roles, definitions, and experiences connected to the groups. According to Proshansky (1978), the impact of the physical environment on this process cannot be ignored. The concept of family includes not only mother, father, and siblings but also places called home. From this point of

view, he stated that place identity is among the identities and sub-identities such as gender, social class, profession, ethnicity, and religion (Proshansky, 1978). Manahasa (2017) asserts that the concept of place identity is an ongoing process consisting of many cognitions related to the past, present, and physical environment. Also, the place is constructed by the physical form, activity, and meaning (Montgomery, 1998), which is related to the individual's psychological and social processes that generate perception. While affective perception is created by the psychological process like meanings and attachments, place identity can be defined not only by the physical elements but also by the meaning developed between people and places (Ujang, 2012). Place identity is affected by cultural characteristics, individual affective perceptions, and functional (Ujang, 2012). As Damazio mentioned (2013 in Keil & Kistmann, 2016), a place identity comprises three components. The first one is the features of the place, which can be both natural and constructed. The second one is its historical origins and culture. And the last one is the relationships that are established in a place for individual or collective use (Keil & Kistmann, 2016).

Place attachment is defined as the affective bond or link that people form with a particular place or environment (Hidalgo & Hernández, 2001). In the literature, the relationship with place is expressed with different concepts such as place attachment, place identity, and place dependence. According to Lewicka (2008), place identity and place attachment can be considered independent from each other but interconnected concepts. While attachment to the place is defined as the emotional dimension of the relationship with the place, the place identity is considered a part of any person's identity. Hernandez et al. (2007) stated that the two concepts are not always related. They argued that although a person does not see a place as a part of his/her identity, he/she can attach to that place or develop less attachment to a place that he/she considers an identity element.

Since place attachment has been studied by different disciplines and researched from many different perspectives, many definitions have accumulated. For the most part,

researchers identify place attachment as a multifaceted concept describing the bond between people and places significant to them (Scannell & Gifford, 2010a). Sociologists attempt to understand the effects of places on human relations and develop an understanding of community development by dealing with the symbolic meaning of place attachment. Human geographers investigate the notion of a sense of place as the "psychological or perceived unity of the geographical environment." Anthropologists focus on the cultural effects and the importance of places in people's daily routines. Environmental psychologists analyze people-place cognitions, behaviors, and emotions and investigate place identity. Community psychology, community development, and urban planning are increasingly concerned with place attachment and place identity (Lenzi et al., 2011).

The place attachment concept can often be named with different concepts. The same concept has been mentioned with different names in other studies, such as community attachment, place identity, place dependence, and sense of place. Hernandez et al. (2007) mentioned the existence of at least four different perspectives examining the relationship between place attachment and place identity. First, they noted that place attachment is considered a component of place identity (Lalli, 1992). Second, they stated that the two terms (place attachment and place identity) are considered synonyms. (B. B. Brown & Werner, 1985). Third, place identity can be a component of place attachment (Kyle et al., 2004). Finally, place identity and place attachment are seen as different dimensions of a higher-level concept like a sense of place (Jorgensen & Stedman, 2001). However, Hernandez et al. (2007) proposed that place identity and place attachment are two different concepts that must be evaluated separately. According to them, “one person could be attached to a place but not be identified with it (i.e., someone who likes to live in a place and wants to remain there but does not feel that this place is part of their identity; at least not their main place identity) and vice versa. Someone could have a high personal identity with a place and not a high place attachment (for example, to feel that one belongs to a place but prefers not to live there)” (Hernández et al., 2007).

Brown and Perkins (1992) claim that place attachment involves positive bonds that enhance individual and group identity between people and physical spaces. Sometimes, it can unconsciously develop from the behavioral, cognitive, and affective bonds between people and their social and physical environments. It represents people's bonds with the places such as homes and communities that are significant and directly experienced but may not have boundaries easily determined. It is not a static concept because place attachment may change by the change in people, activities, or places. For Brown and Perkins (1992), place attachment is multifaceted and includes several layers of environmental scale, such as behavior, cognition, and affection.

According to Altman and Low (1992), place attachment is an emotional link between people and their environment. It is a representative relationship between people and places which is comprised of emotional meanings of a specific place that explains perception and the relation of people to places. In this regard, as Hidalgo and Hernandez (2001 in Ujang, 2012) mentioned, the main feature of this relationship is the disposition to sustain acquaintance, which can be called familiarity with the place. The importance people give to a place triggers the feeling of attachment to a place. According to Altman and Low (1992), the word ‘attachment’ emphasizes affect, and the word ‘place’ focuses on the environment to that people are attached emotionally. The concepts of place identity and place attachment are complementary aspects of an individual's entity. These concepts are interwoven and do not have clearly defined borders.

Hidalgo and Hernandez (2001) argued that the definitions for place attachment are ambiguous, although they consider these definitions appropriate to identify this particular feeling toward certain places. Therefore, they proposed the following definition for place attachment: a positive emotional bond developed between a person and a place, which tends to maintain a person's connection with a place.

Place attachment is also associated with the concept and the perception of safety. According to some studies, place attachment indicators may protect against crime.

Thanks to the responsibility they feel towards the places they are attached to, individuals act to protect the appearance of these places. Therefore they can protect against physical and social incivilities. In addition, with place attachment, people may become more protective of their territories being violated and be more vigilant towards their own and their neighbors' dwellings (Dallago et al., 2009).

In a study examining the psychological benefits of place attachment, Scannell and Gifford (2017a) examined how different types of spaces, different demographic characteristics, and geographic scales affect this attachment. As a result of this research, 13 categories emerged: memories, belonging, positive emotions, relaxation, activity support, comfort/security, personal growth, freedom, entertainment, connection to nature, practical benefits, privacy, and aesthetics. Memories, belonging, and relaxation emerged as the top three benefits of being attached to environmental spaces such as homes, hotels, and lakeside and geographical spaces such as city, country, and region. Among the benefits of attachment to non-manipulable object spaces, such as the coffee house, statue, and front yard, activity, personal development, and security emerged (Scannell & Gifford, 2017a).

Figure 2.1. Thirteen functions of place attachment (Scannell & Gifford, 2014).

Attachment is a feeling or situation in which the community and individuals position themselves and feel like a part of the place. Although society defines the individual with a certain identity, the individual may not have that identity if he/she does not feel belonging to the community that constitutes his/her identity (Güleç Solak, 2017). Attachment to the place develops concerning components such as place, time, memories, activities, social relations and interactions, psychosocial needs, and identity. It is also improved due to the interaction with the individual's perception of the environment. According to Hashemnezhad et al. (2013), place attachment is influenced or promoted by several factors as follows:

- Physical factors: Physical setting is one of the main elements of a place. Some researchers discuss that physical characteristics strengthen both place attachment and satisfaction.

- Social factors: The relationship between the physical environment and personal satisfaction is related to social interactions. Place attachment can be developed by people's interaction, communication, and compatibility with the place.

- Cultural factors: Culture advocates a vision and perception of society. Place attachment is associated with special events or activities people do in their cultural routines.

- Personal Factors: People's preferences and characteristics such as gender, class, race, ethnic may influence the place attachment.

- Memories and Experiences: People remember places they experience, and the place becomes a part of those experiences.

- Place Satisfaction: If people are satisfied with a place, they may want to return to that place repeatedly, which builds meaning and values.

- Interaction and Activity: Place activities with a social and physical place in the form of meaning; behavioral, emotional, and cognitive interactions induce place attachment.

- Time Factor: Time factors such as familiarity or residency in place for a long period improve place attachment.

According to Morgan (2010), there is a lack of developmental theory of place attachment. He pointed out that place theorists propose no explanation of the relationship between place, identity, affect, and cognition progress in childhood. Therefore, he proposed a place theory model for the process of childhood place experiences. He stated that the identity of adulthood is tremendously shaped by childhood place experiences (Morgan, 2010). Thus, place attachment is seen as a multi-layered structure that contributes to the formation, maintenance, and preservation of identity at the individual, group, and cultural level by supporting

one's self-esteem and self-worth from childhood to adulthood, rather than being the relationship between the person and a particular place (Altman & Low, 1992).

Scannell and Gifford (2010a) proposed a comprehensive three-dimensional framework for place attachment. According to this framework, place attachment consists of three different dimensions: person, psychological process, and place dimensions. While the person dimension defines the factors that affect the attachment to the place at two levels, individually and collectively, the process dimension includes the affective, cognitive, and behavioral components of the relationship people establish with the place. The place dimension, on the other hand, emphasizes the physical and social characteristics of the attached place. The first dimension, the person dimension, defines people who are attached to a place and whether they are based on an individual basis (personal experience), a group basis (cultural significance or religious experience), or a combination of both (Scannell & Gifford, 2014). An answer is searched to who is attached (Selçuk & Türkseven Doğrusoy, 2021). Since place attachment forms at individual and group levels, it is essential to specify the meanings of attachment individually and collectively. Therefore, Scannell and Gifford (2010a) analyze the first dimension of place attachment as the personal dimension. Attachment to the place can be at the individual level if the place has witnessed a memorable or meaningful event. For instance, a person may come to Ankara to study at university and leave his/her family for the first time. For this reason, he/she experienced the turning point of his/her young adulthood and developed place attachment. On the contrary, attachment can be at the group level when a place is experienced or attributed a meaning by group members. For instance, Muslims consider Mecca as a sacred place and they are attached there. In the person (or behavioral) dimension, the attachment to a place's cultural and human lifestyles remains at the forefront. Place attachment in this domain includes experiences, opportunities, memories, activities, social interactions with other people, and cultural activities (Counted et al., 2021).

Scannell and Gifford (2010a) stated that the second dimension of place attachment is the psychological process. An answer is searched to the question of how affect, cognition, and behavior occur in the attachment (Selçuk & Türkseven Doğrusoy, 2021). It develops relationships between people and maintains group identity (Counted et al., 2021). In the affect dimension, place attachment includes the emotional relationship between a person and a particular place. This relationship can represent a range of emotions, from love and satisfaction to fear, hate, and indecision. In the cognitive dimension, the formation of the cognitive process enables getting closer to a place and the shape of the meaning of place. The meaning of the place is formed by memories. The memories, beliefs, meanings, and knowledge individuals associate with a place make that place personally meaningful. In the behavior dimension, attachment is expressed through actions. Place attachment is defined as behaviors that maintain closeness (Selçuk & Türkseven Doğrusoy, 2021).

According to Scannell and Gifford (2010a), the third dimension of place attachment is the place dimension. An answer is searched to the question of the attached place's quality (Selçuk & Türkseven Doğrusoy, 2021). In the place dimension, a person may attach to the physical elements of a place. Some people may be attached to the tangible physical attributes of a place, such as nature or architecture (Counted et al., 2021). Scannell and Gifford (2010) consider this dimension the most important one. It refers to the social and physical aspects of place attachment at different spatial levels.

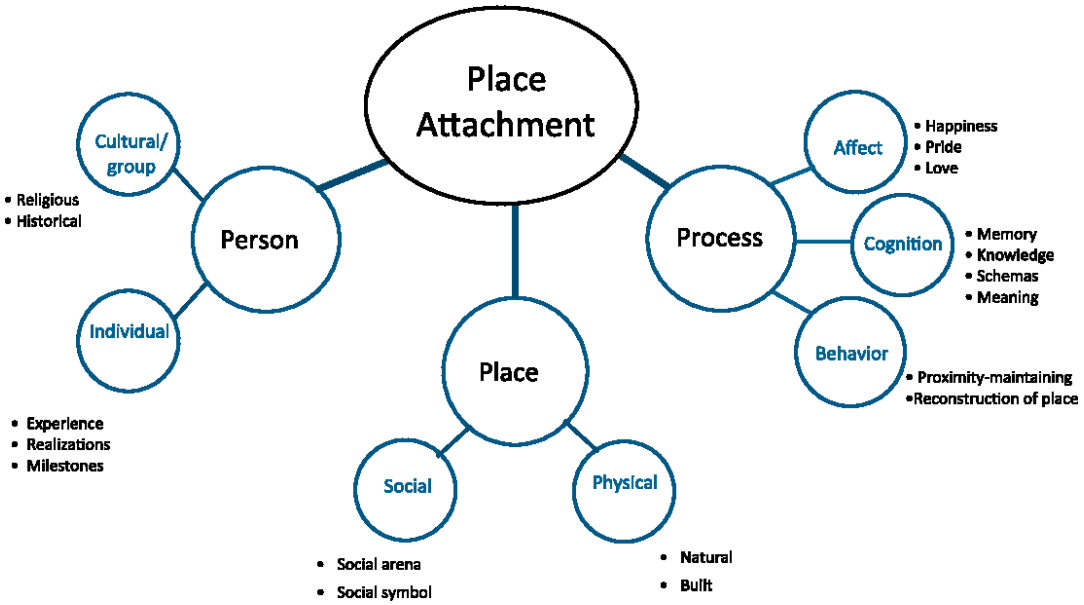

Figure 2.2. Place Attachment Three-Dimensional Framework proposed by Scannell and Gifford (person-process-place) (2010a).

Many studies have been conducted to determine the variables that affect the attachment process to the place. These variables will be discussed in the next section.

2.2.1 The Predictors of Place Attachment

Lewicka (2011) stated that there are factors such as age, residence time, gender, etc. that increase or decrease the level of attachment that the person is mostly unaware of called predictors. According to her, the predictors of place attachment can be categorized into three groups: socio-demographic, social, and physical.

2.2.1.1 Socio-Demographic Predictors

Socio-demographic predictors can be listed as the length of residence, age, gender, socio-economic variables, mobilization, etc. The most commonly stated predictor of place attachment has been stated as the length of residence (Bonaiuto et al., 1999; B. Brown et al., 2003; Gustafson, 2009; Hay, 1998; Kasarda & Janowitz, 1974; Lalli,

1992; Lewicka, 2005, 2010; Shamai & Ilatov, 2005). The importance of this factor for community-neighborhood attachment first emerged in the study of Kasarda and Janowitz (1974). They conducted a survey-based study investigating the predictors of people's relationships with places. When examining the effects of attachment to a place on five independent variables (community size, population density, length of residence, social class, and age), they concluded that residence time and neighborhood ties were the most influential predictors of attachment. It is seen that the scale of attachment to the place increases as the residence time increases in many studies focusing on different types of places. Wilson-Doenges (2000) conducted a study comparing the level of place attachment of residents of gated communities and open settlements. The results show that the differences in place attachment between these two types of settlements are not much when matched according to social status and length of residence. In addition, a study in 2007 conducted by Lewicka and Zaborska measured the place attachments in these two different types of settlements in Poland. It was revealed that being gated or open did not affect their attachment to the place. Factors such as residence time or neighborhood ties were more effective (Lewicka, 2011).

Some studies demonstrate that the age factor influences place attachment. As people age, their attachment to places develops as they consider them immediate home environments or geographical places (Gustafson, 2009; Lewicka, 2008, 2010; Shamai & Ilatov, 2005). According to Lewicka's (2008) study, it was observed that place attachment increased with older age. However, it has also been observed that different age groups experience attachment at different scales. When the scale of attachment to different types of places is separated according to age groups, it has been revealed that young people have a higher level of attachment to the city, and the middle-aged group to the home more. In a study conducted by Scannell and Gifford (2017a), as the reasons for attachment to the place, the young participants showed a sense of belonging, and this feeling was mainly based on peer relations. In contrast, the middle-aged participants showed cultural values.

In some studies on the level of attachment to place, it has been revealed that women show higher attachment to a place than men (Gustafson, 2009; Hidalgo & Hernández, 2001; Lewicka, 2008; Rollero & de Piccoli, 2010; Scannell & Gifford, 2017a). When socio-economic variables are examined, some studies discuss that education level and home ownership do not affect place attachment (Lewicka, 2008; Scannell & Gifford, 2010b), while others discuss that they are an influential factor (B. Brown et al., 2003; Mesch & Manor, 1998). According to Lewicka (2010), there is an indirect relationship between socio-economic level and place attachment. Especially in terms of income level, if the mobilization of high-income people is high, there is a negative effect on attachment to the place.

Geographers, demographers, psychologists, and sociologists have studied the relationship between place attachment and mobility. As a result of these studies, increasing mobilization and displacement processes with globalization are damaging the relationship between people and place. Kanık (2018) mentions that displacement (whether forced or not) has weakened the relationship with the place and even the psychology of the person as a result, referring to Fried's (1966) earlier study. In this study, interviews conducted with Boston residents a few years before or after their displacement showed that this process is similar to a grieving process. It has been determined that people's expressions related to place include a painful sense of loss, psychological stress, social stress, feelings of desperation, and anger toward displacement. On the other hand, Brown and Perkins (1992) stated that voluntary relocations would increase attachment to the place, while involuntary relocations, which generally follow natural forces such as hurricanes, earthquakes, etc., will cause a sense of loss and will damage attachment to the new place.

As Ujang (2012) cites from Rose (1995), a sense of attachment to a place is influenced by racial, ethnic, or class identity. For this reason, attachment to place can be determined according to the socio-cultural characteristics and roles of the individuals. In some studies, ethnicity is expressed as one of the factors affecting place attachment (B. Brown et al., 2003; Ujang, 2012; Ujang et al., 2018). In general, studies compare Black and White people and show that Black people are less

attached to their communities. This is because Black people have lower economic standards and live in lower socioeconomic places. Brown et al.'s (B. Brown et al., 2003) study comparing place attachments with White and Hispanic people revealed that Non-Whites or Hispanic people had higher attachment levels.

Besides these variables, the multidimensional nature of the relationship with place necessitates the evaluation of many variables related to place and social processes together.

2.2.1.2 Social Predictors

Social predictors can be categorized into two groups: community or social ties and a sense of security in the place of residence. Both two variables of place attachment are mainly studied as social predictors. Social ties can encompass many relationships: relationships with friends and relatives in the neighborhood, relationships with neighbors, the prevalence of social networks, etc. In many studies, social ties are an indisputable positive predictor of place attachment (Bonaiuto et al., 1999; Chow & Healey, 2008; Kasarda & Janowitz, 1974; Lewicka, 2005, 2010, 2011; Mesch & Manor, 1998).

The other variable is the sense of security in the place of residence. This variable was also a positive predictor of place attachment in studies in which it was included (B. Brown et al., 2003; Lewicka, 2010; Mesch & Manor, 1998). The place's crime history or the residents' fear of crime and the sense of control felt about the place are effective in attachment to the place (B. Brown et al., 2003).

Time is another significant variable of social predictors. In some studies, it was also used as frequency (Mantey, 2015; Ujang et al., 2014) or length of engagement (Karsono et al., 2019). Attachment to place is not usually an instantaneous notion. It tends to be strengthened by experiences and memories accumulated over time. Many studies showed that the time a person spends in a place positively affects and increases his/her attachment to that place (B. Brown et al., 2003; Lewicka, 2011;

Smaldone, 2007). In Smaldone's (2007) study, visitors' frequency of visits, continuity of engagement, and length of stay increased place attachments.

Finally, the literature review revealed that interactions and activities also play an essential role in the formation of place attachment (B. Brown et al., 2003; Chow & Healey, 2008; Mesch & Manor, 1998; Sattarzadeh, 2018; Selçuk & Türkseven Doğrusoy, 2021; Ujang, 2008; Ujang et al., 2014). The prevalence and type of social interactions that occur in a place are related to place attachment (Scannell & Gifford, 2017a). For instance, neighborhood attachment is stronger when one lives nearby with acquaintances, friends, or family. In Chow and Healey's (2008) study, establishing new relationships and engaging in social interactions was a factor that increased engagement for all participants. According to Lalli (1992), the relationship with space has become vital as it symbolizes social relationships established through social interactions. Thus, part of place attachment includes an attachment to others with whom individuals interact in these places, and the other part includes an attachment to the social group the place represents. Some studies illustrated that activity is a factor that increases place attachment. If a place allows for physical activities, people feel more attached to those places (Karami et al., 2014; Selçuk & Türkseven Doğrusoy, 2021).

2.2.1.3 Physical and Environmental Predictors

The physical features of the place are effective in the relationship established with the place and the attachment. Some of the physical properties may be objective and definite factors such as the size of the building and density of the building. It can also be based on the participants' subjective evaluation, such as the cleanliness and maintenance of the living place (Lewicka, 2011). Although social factors are the most common predictor of attachment to the place of residence in most studies, physical variables also play an important role. According to Hidalgo and Hernandez (2001), the physical factors are the essential factors in the attachment to the city scale; on the contrary, social factors are influential in the attachment to the home and

the neighborhood scale. Lewicka (2010, 2011) stated that physical characteristics significantly influence place attachment, especially in small-scale places. Also, physical characteristics such as the size of the building, its cleanliness, and the type of house predict the attachment to the building and neighborhood better than the attachment to the town and the city. Bonaiuto et al. (1999) determined that variables such as quiet spaces, aesthetics, and urban planning are the high and medium predictors, while the service and facility dimension is the weakest predictor for attachment to the neighborhood. In the study of Kim and Kaplan (2004, the effect of the new urbanism movement on the attachment relationship in two different neighborhoods was examined. New urbanism focuses on human-scaled urban design; It is a planning approach that includes walkable neighborhoods, streets, accessible public spaces, and proximity to housing and shopping. The notion of New Urbanism and a sense of community are generally closely linked, and attachment is one of the domains of a sense of community. Kim and Kaplan's (2004) study compared a neighborhood, an exemplar of new urbanism, with a conventional suburban neighborhood. As a result of the study, it was determined that a prototypic new urbanist development is more satisfying for people in that neighborhood with its walkable spaces and distinctive physical characteristics. Findings showed that the walking paths, landscape, and architectural features were effective in attachment to the place.

Finally, according to the literature review findings, accessibility is one of the physical factors affecting place attachment. Accessibility is directly related to the use of a place. If a place is not easily accessible to people, their use of the place may also be limited. Karsono and Wahid's (2015) study findings indicated that the location of the place, the regular design of the pedestrian paths, and therefore the good accessibility of the place emerged as a factor that allows users to spend more time there and increases the place attachments.

According to all the above, it is necessary to evaluate the effect of the place's physical characteristics on the attachment to the place and the meaning it creates. Many socio-

demographic and social variables also affect this meaning. It has been observed that attachment changes according to the relationship between these variables and the types of places.

Table 2.1 The Sources of Predictors of Place Attachment (Source: Author)

PREDICTOR	DIMENSION	SOURCE
Length of Residence	Socio-Demographic	Kasarda & Janowitz (1974) Lalli, (1992) Hay (1998) Bonaiuto et al. (1999) B. Brown et al. (2003) Lewicka (2005) Shamai & Ilatov (2005) Gustafson (2009) Lewicka (2010) Karami et. al. (2014) Sattarzadeh (2018)
Age	Socio-Demographic	Shamai & Ilatov (2005) Lewicka (2008) Gustafson (2009) Sıvalıoğlu & Berköz (2016)
Gender	Socio-Demographic	Hidalgo & Hernández (2001) Lewicka (2008) Gustafson (2009) Rollero & de Piccoli (2017a)
Education	Socio-Demographic	Mesch & Manor (1998) Brown et al. (2003)
Home-Ownership	Socio-Demographic	Mesch & Manor (1998) Brown et al. (2003)
Mobility	Socio-Demographic	Brown and Perkins (1992)

Table 2.1 (cont'd)

Ethnicity	Socio-Demographic	Brown et al. (2003) Ujang (2012) Ujang et al. (2018)
Social/neighborhood ties	Social	Kasarda & Janowitz (1974) Mesch & Manor (1998) Bonaiuto et al. (1999) Lewicka (2005) Chow & Healey (2008) Lewicka (2010) Lewicka (2011) Hashemnezhad et al. (2013) Mantey (2015)
Sense of Security	Social	Mesch & Manor (1998) B. Brown et al. (2003) Lewicka (2010) Sıvalıoğlu & Berköz (2016) Düzenli et al. (2018)
Time	Social	B. Brown et al. (2003) Smaldone (2007) Ujang (2014) Mantey (2015) Sıvalıoğlu & Berköz (2016) Karsono et al. (2019)

Table 2.1 (cont'd)

Interaction and Activities	Social	Hanan (2013) Karami et al. (2014) Ujang et al. (2014) Düzenli et al. (2018) Sattarzadeh (2018) Talischi & Rezaei (2019) Selçuk & Türkseven Doğrusoy (2021)
Architectural Features and City Planning	Physical and Environmental	Hanan (2013) Bonaiuto et al. (1999) Kim & Kaplan (2004) Lewicka (2011) Karami et al. (2014) Ujang et al. (2014) Talischi & Rezaei (2019)
Availability of Facility and Services	Physical and Environmental	Bonaiuto et al. (1999) Hashemnezhad et al. (2013)
Accessibility	Physical and Environmental	Hanan (2013) Karsono and Wahid (2015) Karsono et al. (2019) Sattarzadeh (2018) Selçuk & Türkseven Doğrusoy (2021)

2.2.2 Place Attachment at Different Scale of Place

The concept of the place can differ in various ways: scale or size, tangible or symbolic, experienced and known or unexperienced or unknown. There are places of different scales varying from a room or house to the universe in terms of size and

usage area (Altman & Low, 1992). However, the sense of attachment developed for a place directly experienced may differ from the sense of attachment developed for a place indirectly associated. For a person, a home or neighborhood is a place that is directly experienced and has a tangible meaning. On the other hand, a country or a continent can be a place that is indirectly experienced and therefore has a symbolic meaning (Yenice Kanik, 2018). According to Hidalgo and Hernandez (2001), place attachment can develop to different degrees in different places. With participants from 24 different countries, in a study measuring the levels of attachment to places at the neighborhood, city, state, country, and continent levels, the highest level of attachment was for the country; it was determined that the lowest binding level was for the continent. The level of attachment to the neighborhood was determined in the second place, and the level of attachment to the city was determined in the third place (Laczko, 2005). In a study conducted by Hidalgo and Hernandez (2001) in Spain, the level of attachment to the place at home, neighborhood, and city level was measured separately in social and physical dimensions. As a result, there was no difference between the city and the house; Neighborhood level attachment was found to be lower than the others. According to some studies, in small-scale places such as houses and neighborhoods, the experiences of people about places stand out; on a geographical scale, places that exceed the limits of experience symbolic meanings are effective (Yenice Kanik, 2018).

CHAPTER 3

PUBLIC SPACE AND PLACE ATTACHMENT

This chapter aims to present a comprehensive study of the concept of public space and evaluate the concept of place attachment in public spaces. In this context, the studies that examined these concepts are summarized, and the variables that affect the relationship between public space and place attachment are listed.

3.1 Definition of Public and Public Space

As an adjective, the dictionary equivalent of the word public includes "of or pertaining to the people as a whole; belonging to, affecting, or concerning the community or nation; open to common or general use." On the other hand, as a noun, the meaning of the word includes "the general body of mankind, or a nation, state, or community; the people, indefinitely." Both these senses refer to many people conceptualized as the state or society and those associated with them (Madanipour, 2003).

In terms of word meanings and uses, the word public is also used to belong to the state and official. However, in the scope of the thesis, it is used to express the spaces that everyone can access and coexist.

When the origin of the word is examined, public space expresses a world that is open and common to everyone. Arendt (1998), who focused on humanity in her theoretical studies, in her book Human Condition, claimed that public space is more than the world where people live organically; she states that it is a man-made world where individuals seek the conditions of coexistence. She mentioned two different phenomena in the public sphere. First, she defended that everything seen and heard in the public space can be seen and heard by everyone. This is significant as everyone

hears and sees from a different position. The fact that people have many different perspectives and aspects in the common world causes diversity in people and opinions. Second, the existence of publicity is possible in a common world, which is related to a human artifact and affairs which go on among those who inhabit the man-made world together. Although also describing an intangible space, public spaces were created and shared by people. In every period in which public spaces can be mentioned, public space enabled people to establish and associate with each other and separated each person's private space.

According to Habermas (1991), events and occasions are called public when they are open to everyone. He asserted that etymologically the concept of the public is associated with the concept of the common, while the idea of the private is associated with the concept of the particular. Public spaces in the center of cities function as vital points where citizens can gather freely and without restriction. Apart from the state and state organs, it is a field of assembly, discussion, agreement, and activity, which belongs entirely to citizens and where equality is dominant.

According to Sennett (1977), public space is a place where individuals can meet and be aware of the society they live. He stated that, in its modern sense, the term public appears as a term circulated in Western history since the end of the 17th century. It takes a form similar to its current usage, especially belonging to the bourgeois society. At the end of the 17th century, the word public, which means open to everyone's control; has started to be used in opposition to the word private, which means a living area limited to one's family and friends (Sennett, 1977, p. 17). In this context, it can be stated that the shaping and gaining of the meaning of public concepts started with the development of bourgeois society at the end of the 17th century.

The intellectual background of the public, which it contains and where this place called the public is, started to come to the fore in the early 18th century, especially in London and Paris. By gaining its modern meaning, the word is not only a different

position from family and friends; It has also begun to describe the public realm created by acquaintances and strangers (Sennett, 1977).

Tibbalds (2001) asserted that the public realm is the crucial part of the town and cities where a significant amount of human contact and communication happens. People have physical and visual access to the whole parts of the urban fabric. For this reason, it can expand from streets, squares, and parks of the town and city to the buildings surrounding and lining them.

According to Madanipour (1999), public spaces are physical spaces within cities that are accessible to everyone, and citizens and strangers can access and use these spaces with minimal restrictions. Public spaces are ensured and controlled by the state and are used and shared by each member of society (Madanipour, 2003). Public spaces play a significant role in the formation of the identities of the cities. In the context of time, they connect the present with the past and the future. They form reference points between them. For this reason, they create important living spaces by reflecting society's collective memory (Çalak, 2012). Halbwaschs (1992) argued that collective memory is a socially constructed concept. It is a concept based on concrete social experiences and related to temporal and spatial frameworks. It is remembered by periods, remembering places visited, and inserting ideas and images into thought patterns of certain social groups. In daily life, public spaces provide casual encounters that can connect people and give their lives meaning and power. Public spaces serve daily needs and provide a place for special occasions (Carr et al., 1992). According to Çalak (2012), such urban experiences nurture collective memory and increase the sensitivity to togetherness.

According to Madanipour (1996), urban space is a public realm that people share, a ground for politics, religion, commerce, sports, etc., and engage in functional and ritual activities. Madanipour (1996, p. 145) defined public space as:

> "Public urban space is the space that is not controlled by private individuals or organizations, and hence is open to the public. This space is characterized

by the possibility of allowing different groups of people, regardless of their class, ethnicity, gender, and age, to intermingle."

According to Carr et al. (1992, p. 19), public spaces should be responsive, democratic, and meaningful. First, they defined responsive spaces designed to meet the users' needs. These users' needs can be considered essential requirements which people want to satisfy in public spaces those comfort, relaxation, active and passive engagement, and discovery. Public spaces are also an environment for physically or mentally useful activities such as conversation, gardening, exercise, and so on (Carr et al., 1992). Second, they stated that democratic spaces look out for the users' rights. They should be accessible to each member of society and enable them to act freely more than in people's homes or workplaces. In that kind of space, people learn how to live together since these spaces belong to everybody. Finally, meaningful spaces enable people to create an affective link between places and their personal lives, which are associated with physical and social contexts (Carr et al., 1992). As Carr et al. (1992) cited Francis and Hester, continuous use of public spaces with their memories can reinforce one's sense of personal continuity in a changing world. They can become sacred to a community by increasing overlapping memories of individuals and shared experiences.

3.2 Types of Public Spaces

Carr et al. (1992) defined public spaces as open places where people go for individual or group activities. Public spaces generally include public facilities such as walkways, rest benches, water elements, and physical and visual elements such as landscape elements. Some public spaces are publicly owned, and some are privately owned, but all are open to the public. Carr et al. (1992) identified the public space types as follows: public parks, squares, plazas, markets, streets, playgrounds, community open spaces, greenways and parkways, atrium/ indoor marketplaces, found/neighborhood spaces, and waterfronts.

Campus open public spaces are places for recreation (active/passive), sports, play, meeting, and social activities. According to the literature, building front and back yards are the most popular open public spaces on university campuses (Hanan, 2013; Talischi & Rezaei, 2019). Nassar (2021) has divided campus open public spaces into four categories according to the activities they contain, their size, building forms, and psychological aspects. According to the activities, the campus's open public spaces are divided into two active and passive recreation. Active recreation areas consist of areas that include sports activities. On the other hand, passive recreation areas consist of environments that encourage quiet work, away from noise. It can contain a view or various landscape elements (Nassar, 2021). According to the size of the open space, campus open public spaces are divided into small and large gathering areas. Small gathering areas are close to quiet areas surrounded by specific buildings. It includes activities such as cultural presentations and informal lectures. Large meeting areas contain more active areas where students often meet and socialize. Concerts, graduation ceremonies, etc., occur in these areas (Nassar, 2021). According to building forms, campus open public spaces are divided into two enclosed buildings and front yards/courts of buildings. The areas surrounded by the buildings contain different sizes and landscape elements from the campus buildings. They connect the inside and outside, which contain the entrances of the buildings. It includes a sitting element, paving, and landscape elements (Nassar, 2021). According to the psychological aspect, spaces are divided into symbolic and discovered spaces. Symbolic spaces contain a symbol consisting of landscape, exterior, or architectural elements. This symbol gives meaning to the campus. Discovered areas are located in various parts of the campus, often rich in landscape, and have quality furniture elements (Nassar, 2021).

Table 3.1 Types and Features of Public Spaces (Carr et al., 1992)

Types	Features
Public Parks	
- Public/central parks	Open space of the citywide importance-near center of the city
- Downtown parks	Green parks located in downtown areas
- Commons	Once a pasture area for common use, now a leisure activity area
- Neighborhood parks	Open space developed in residential environments
- Mini/vest-pocket parks	The small urban park surrounded by buildings
Square and Plazas	
- Central Square	Square or plaza; often part of the historical development of the city center
- Corporate plaza	Plaza developed as part of office or commercial buildings – mostly in the downtown area
- Memorial	Public place memorializes important people or events
Markets	
- Farmers' markets(bazaar)	Open spaces or streets often temporary or occur only during certain times
Streets	
- Pedestrian sidewalks	Part of cities, people move on foot, along sidewalks and paths
- Pedestrian mall	Street closed to traffic located downtown
- Transit mal	Improved transit access to downtown
- Traffic restricted streets	The street is used as an open public space
- Town trails	Connect parts of cities through integrated urban trails
Playgrounds	
- Playground	Play area located in a neighborhood
- Schoolyard	As a play area or community use space
Community open spaces	
- Community garden/park	Neighborhood spaces often developed on private land
Greenways and parkways	
- Interconnected recreational and natural areas	Natural areas and recreational spaces connected by pedestrian and bicycle paths
Atrium/indoor marketplace	
- Atrium	Indoor plazas or pedestrian streets, considered by many cities as part of open spaces system
- Marketplace/downtown shopping center	Interior shopping areas, often freestanding or rehabilitation of older buildings
Found/neighborhood spaces	
Found spaces/everyday open spaces	Open space accessible by everyone, such as a street corner, steps to buildings, etc.
Waterfronts	
Waterfronts, harbors, beaches, riverfronts, piers, lakefronts	Open space along waterways in cities

Studies have indicated that successful public spaces are those which fulfill the needs of humans needs. According to Carr et al. (1992), there are five reasons for people's presence in public spaces: comfort, relaxation, passive and active engagement with the environment, and discovery.

Comfort is related to basic needs such as food, drink, shelter, protection, and rest. All other needs are difficult to meet without relaxation. Comfort also affects how much time a person spends in public spaces (Carr et al., 1992, p. 94). Social and psychological comfort also develops a sense of security in the public space. Comfortable seating and the presence of public toilets are important elements of the need for comfort. In some public spaces, these may be ignored.

Relaxation in public space is achieved by relaxing the body and mind. People look for spaces to take a break from their daily routine and find tranquility. It can be achieved through sensory stimulation from natural elements, accompanied by a quiet atmosphere. Natural features (presence of water, trees, and green areas) in the public space can be seen as the dominant factor of relaxation. Separation from vehicular traffic and pedestrian flow in public spaces is also important for relaxation (Carr et al., 1992, p. 102).

Passive engagement relates to the need to encounter the environment without being actively involved. It includes people observing other people or surrounding activities (sports events, games, etc.), viewing public art, pedestrian traffic, or streetscapes in the public space. In addition, the physical features of the public space can also be a focal point for passive engagement. For example, fountains often can be considered interesting for this type of engagement. Passive engagement is about looking rather than talking or doing, so this encounter is indirect or passive (Carr et al., 1992, p.105).

Active engagement involves direct contact and interaction of people with their environment. This type of engagement has a social function, which is achieved

through activities such as social interaction, children's play, recreation, sports activities, gathering, and promenade. Active engagement promotes exercise and health (Carr et al., 1992, p. 121). It encourages people to participate in sports activities, buy food and drink, and socialize. Active engagement is highly attractive to people as it allows people to engage in social interactions in the public space. It contributes significantly to livable and dynamic public spaces (Maulan, 2002).

Discovery includes people's desire to be stimulated by pleasurable experiences and their desire to explore public spaces. It also offers new experiences that excite, educate, and delight people (Maulan, 2002). Changing vistas, activities, and physical characteristics can trigger people's sense of discovery (Carr et al., 1992, p. 134).

It is necessary to evaluate the space together with the social content and the society with the space. People create and change spaces and are also affected by these spaces in different ways. Public space is a significant concept to determine the publicness of life. Public life offers relief from the stresses of work and home life routines, providing opportunities for entertainment, movement, and social communication. It also gathers all of society with diverse groups from different cultures together. Therefore, public spaces can be considered multicultural, heterogeneous places. People can experience and learn new things from each other. Public life consists of the activities that emerge in public spaces, such as streets, parks, squares, etc. (Carr et al., 1992).

According to Gehl (1987/2011), outdoor activities can be examined in three categories: necessary, optional, and social.

Necessary activities: Tasks and engagements in daily routine are considered necessary activities. These activities are mostly associated with walking. Since the activities in this group are what the person requires to do, they are not affected by the physical characteristics of the environment because they must be done in any case and will be done independently of the physical content. For instance, it is a compulsory activity for a person to go from home to work or school and to walk on

certain roads or streets. No matter how uncomfortable or poor quality these roads and streets are, they must carry out this activity.

Optional activities: These are the activities that can be performed when the physical environment conditions are most suitable. Most activities planned to be done outside (especially recreational) are considered optional activities. For example, a group of friends can go to the park on a sunny day and have a picnic. This is an optional activity and is affected by external conditions. Optional activities do not include obligations such as necessary activities. It is directly related to people's preferences.

Social activities: Social activities depend on the presence of other individuals in the public space. Social activities include children's playing with their friends, people's conversations and greetings, and various other communal activities. In the simplest form, it should involve seeing and hearing other people. Social activities emerge spontaneously in people's interactions with each other by being in the same place both in necessary and optional activities.

3.3 The Relation Between Place Attachment and Public Space

The concept of the public space, which enables the development of the sense of place and place attachment, is an important measure in urban design. Attachment to a place can be considered as an individual's feeling of being a significant part of his or her natural, cultural, and social environment. In public spaces, with the opportunities such as social interactions, sharing of common historical ties, values, and spaces, and recognition of individuals by society because of social encounters, these feelings can be enhanced (Sınmaz, 2018). Public spaces provide casual encounters, face-to-face communication, and interactions with people and reduce social isolation. Hence, they enable people to attach to their environment (Sınmaz, 2018). The notion of the sense of place, which is continuous, comprises the past, present, and future. Public spaces have played a crucial role in attracting people and their existence in the cities. This existence supports social interactions and responses, creating shared collective

memory and a sense of belonging to those public spaces (Fereidooni & Soheili, 2018). Also, collective memory generated from society's sharing of common memories, emotions, and experiences is a significant feature of public spaces. Therefore, public spaces feed the sense of place by connecting the present with the past and future. Attachment to a place in a public space enhances the quality of life for society in the city. The influence of place attachment can be seen in both community psychology and mental health in the city (Novianti et al., 2018).

In open public spaces, people's social interaction needs are fulfilled. They provide opportunities for people to do activities such as walking, sitting outside, standing, talking, listening, playing, and exercising (Gehl, 1987/2010). In addition to these functional needs, public spaces should also provide opportunities to participate in meaningful activities on an individual or group scale. These public spaces, which are an important part of cities, are included in urban life to the extent that they meet people's physical, social and emotional needs, desires, and expectations (Selçuk & Türkseven Doğrusoy, 2021). When they are involved in city life, they interact with the users. In this interaction process, people develop emotional bonds with the place. The more people spend time in these places, the stronger their attachment becomes (Selçuk & Türkseven Doğrusoy, 2021).

Recently, there have been a few studies covering field studies investigating place attachment in open public spaces (Düzenli et al., 2018; Görkem Özkan, 2019; Hanan, 2013; Karami et al., 2014; Karsono et al., 2019; Mantey, 2015; Sattarzadeh, 2018; Selçuk & Türkseven Doğrusoy, 2021; Sivalioğlu & Berköz, 2016; Talischi & Rezaei, 2019; Ujang et al., 2014).

In a study conducted by Mantey (2015), 149 respondents among the residents in Zacisze, Warsaw, were interviewed. The study area was selected since it has a limited number of public spaces: a park, a small local square, a narrow water channel, and a few attractive undeveloped land plots. The study aimed to determine the positive relationship between public spaces and housing estates. Although age (most of the respondents are 18-25 years old) and length of residence (most of the respondents are residing 21 years or longer) percentages were given in the study,

these factors were not considered a determinant, and their effects on the place attachment were not evaluated. %55 of the respondents stated that public spaces in Zacisze are not adequate for people to establish close relationships with these places. Also, it was demonstrated that there are not a sufficient number of public spaces such as a park, walking, cycling path, playgrounds, sports fields, etc. These limited public spaces such as parks, squares, and playgrounds are preferred by people who have children up to 13 years old and less by people who do not have children. Such public spaces are used either frequently or rarely. According to the findings of the research, people who frequently use its public spaces feel more attached to Zacisze. In addition, it was noted that respondents' good relations and social ties with neighbors were prompted by their place attachment. Social context is significant for building stronger relationships with places. According to the results of the research, social factors were accepted as essential predictors of place attachment. Also, using local public spaces strengthens attachment to the housing estate in Zacisze.

In the study, which was conducted by Selçuk and Türkseven Doğrusoy (2021) with 38 people through simple observations, and structured and semi-structured questionnaires, the relationship between people and places in the focus of place attachment was discussed specifically in the Izmir Bostanlı coast. In this study, socio-demographic user characteristics were questioned in the person dimension. According to the survey results, it has been determined that the area is used more frequently by young people, as the percentage of participants aged 0-18 and 19-25 has the highest value (37%). As questions about income level were not asked within the scope of the study, results related to socio-economic level could not be determined. 82% of the participants have been residing in İzmir for more than ten years. Since students primarily use the area, it has emerged as the highest university in terms of education (37%). According to the survey data, 27% of users are used daily, 30% are used several times a week, 30% are used several times a month, and 13% are used several times a year. In addition, 16% of users spend 1-2 hours, 43% spend 2-3 hours, and 41% spend more than 3 hours. In the study, the participants mentioned emotional expressions such as peace, comfort, silence, fun, pleasure,

comfort, and beauty for the feelings of this place. As a result of this research, it has been revealed that the area allows various activities to meet user needs such as resting and relaxation, stress relief, socializing, and entertainment, increasing the place attachment. Users generally interacted with the place on an emotional level. Memories accumulate in direct proportion to the time people spend in that place. Memories, turning points, and lived experiences make that place meaningful. Considering that this public space was reorganized only three years ago, it has been observed that the memory layer has not yet formed in the users. This once again emphasized the importance of the concept of time for place attachment.

In Ujang et. al.'s (2014) study, 30 users were interviewed face-to-face in SaujanaHijau Park and Putra Perdana Park in Putrajaya, Malesia. The study discussed the effect of place attachment on park use and social interaction. According to the survey data, most users spend an average of 1-3 hours in these parks several times a week, especially on weekends. In the study, most users stated that they visited these parks for physical activity. In addition, most respondents noted that the presence of green areas, trees, and landscape characteristics attracted them. As a result of the research, it was seen that the frequency of visits and proximity are the factors that also increase place attachment.

The study conducted by Karsono et al. (2019) was based on questionnaires, interviews, and observations with 120 people in Hiraq Square Lhokseumawe, a famous public space in the city of Lhokseumawe, Aceh, Indonesia. Respondents were divided into two separate categories as 60 mobile users, who commonly are visitors and residents, and 60 static users, mostly sidewalk vendors. Respondents show that the main users of the area comprise people 18-25 years old and 25-49 years old, and %53 of them are female users. According to the study's findings, the attachment was expressed with five different terms: length of engagement, level of familiarity, dependency, satisfaction, and sense of comfort. Users of this square stated that they use it several times a week, particularly on weekends. The results showed that place is dependent on earning fixed income and daily job opportunities. The satisfaction level of the participants was mostly expressed by the presence and

variety of outdoor facilities, street access, and the number of visitors. Comfort has been expressed physically and environmentally, and it has been mentioned that it is provided with facilities that allow ease of access and protection from weather conditions. As a result of this study, it was thought that the area's being accessible triggered the place attachment. For static users, this area has become the dependence and livelihood area where they meet their needs. On the other hand, mobile users are attached to the functions offered by the area. As understood from the results, attachment levels varied according to the roles of the users in the field.

The survey and observation-based study by Sattarzadeh (2018) aimed to investigate the influential factors that increase place attachment in urban public spaces in Tabriz, Iran. In this study, Khaghani Park, pedestrian zones of Tarbiat and Maghsoodiyeh, the enclosure of Bazaar, and sitting-gathering spaces along Imam Street were selected as study areas. In the study, 55% of the respondents were women. Also, most of the respondents were between the ages of 45-55. At the education level, the highest rate was a university with 63%. It has been observed that independent variables (age, gender, and residence time) have an important relationship with dependent variables (social interaction and sense of security). Length of residence became an important factor that enhances place attachment. According to the results of this study, the presence of green spaces and diversity in activities led people to social interaction in public spaces. Therefore, these factors increased the level of place attachment. In addition, it has been observed that respondents prefer comfortable, lively, secure places and can interact with them without worrying about work or personal issues. The research results revealed that the functional diversity, access and seating, and resting areas of the space increase the level of place attachment.

In the survey conducted by Karami et al. (2014), the correlation between place attachment and neighborhood urban spaces in the Narmak neighborhood in Tehran was investigated. Participants in the 29-39 age group had the highest percentage in the study (30%). It was observed that socio-demographic variables such as age and gender were not directly related to attachment. However, among socio-demographic

variables, length of residence was the most effective predictor of place attachment. As a result of this research, it was revealed that quietness and security are two strong factors. In this study, it was concluded that the physical role (building architecture and extent of open spaces) and facilitating activities functions of public spaces increase place attachment. Findings showed that social activities are more effective in creating place attachment.

In the study conducted by Sıvalıoğlu and Berköz (2016), the relationship between attachment to the national parks and the satisfaction level of users was examined. Five national parks with different characteristics and the highest number of users in the Marmara region were selected as study areas: Bird Paradise Park, Balıkesir; Uludağ National Park, Bursa; Gallipoli Peninsula Historical National Park, Çanakkale; Kazdagi National Park, Balıkesir; and Troy Historical National Park, Çanakkale. In this study, a total of 400 people were interviewed. 57% of the participants in the study are female. 64.1% of participants were people between the ages of 20-40. High school and university graduates composed 78.7% of park users. However, the study found no relation between age, gender, time spent in the park, and satisfaction. When the education variable was examined, it was observed that a negative relationship emerged: people with higher education status had higher expectations, so they were found to be less satisfied when the place did not meet all their needs. When the age variable was examined, a positive correlation was observed with the attachment at a rate of 25.1%. That is, as age increases, the level of attachment also increases. According to the results, the place's frequency of use was among the factors that increase place attachment. In addition, the sense of security has emerged as a factor that increases satisfaction and thus attachment.

In the study conducted by Moore and Graefe (1994), users' attachments to rail trails, a recreational environment, were examined. 2151 users over the age of 16 were selected and interviewed. For this study, three rail-trails that differ in terms of the physical setting, region of the country, and level of use were selected. They were Heritage Trail, Iowa; the St. Marks Trail, Florida; and Lafayette Trail, California. Findings demonstrated that length of engagement and frequency of use of these

places are important factors in increasing place attachment for the users of the trails. The results of the study revealed that the participants developed their attachment to these recreational trails as the places allow for different activities.

In the study conducted by Talischi and Rezaei (2019) with closed-ended questions, the attachments of students studying at the Faculty of Fine Arts of Tehran University to the open public spaces of this faculty were examined. According to the research results, the most important factor that increased students' attachment to open public spaces was that these places allow more collective activities. Accordingly, it can be inferred that students develop their social bonds and become more attached to places where they can interact socially. According to the study results, social relations emerged as the main component of the bond established between the students and the open public spaces of the faculties. The social interaction factor was accompanied by the presence of artistic-architectural elements (fountains, works of art, sculptures, etc.) and green spaces.

In the study conducted by Hanan (2013) with 230 students based on on-site observation and questionnaire, the use of open spaces on the campus of Bandung Institute of Technology University in Indonesia and the essential features that make these spaces meaningful for students were examined. According to the study's results, it has been revealed that open spaces that offer social interaction and outdoor activities are more meaningful and preferred by students. According to student answers, these open spaces appeared under three different headings: common spaces, courtyards, and building verandas. 60.5% of the respondents spend 1-3 hours, and 37.2% spend 3-6 hours in these areas. It has been observed that students use these open spaces in their spare time to chat with their friends, wait for the next lesson, study, or have lunch during lunch break. Easy access, sitting facilities, and shaded area were among the students' preferences for using these areas. The presence of green areas was also found very attractive to students.

The aim of the survey-based study conducted by Düzenli et al. (2018) with 86 students who came to KTU in Trabzon for university education from outside the city, was to investigate how these students are affected by the campus design and its open

spaces, and their level of attachment to these places. The main finding of the study was that students feel safe on campus and this positively affects their attachments. In addition, the social interactions here and the fact that the campus provides opportunities for activities have emerged as a factor that increases their attachments. As a result, it has been observed that spatial characteristics affect attachment.

3.3.1 Parameters of Place Attachment in Public Space

When the literature evaluating the level of place attachment in the public space was examined, the parameters that have been found to increase place attachment in public spaces are listed. These parameters are as follows: frequency of use (Mantey, 2015; Moore & Graefe, 1994; Sivalioğlu & Berköz, 2016; Ujang et al., 2014), length of engagement (Karsono et al., 2019; Moore & Graefe, 1994; Selçuk & Türkseven Doğrusoy, 2021) and level of familiarity (Karsono et al., 2019), interaction and activity (Düzenli et al., 2018; Hanan, 2013; Karami et al., 2014; Mantey, 2015; Moore & Graefe, 1994; Sattarzadeh, 2018; Sivalioğlu & Berköz, 2016; Talischi & Rezaei, 2019; Ujang et al., 2014), accessibility (Hanan, 2013; Karsono et al., 2019), sense of security (Karami et al., 2014; Sattarzadeh, 2018; Sivalioğlu & Berköz, 2016), and physical attributes (Hanan, 2013; Karami et al., 2014; Sattarzadeh, 2018; Sivalioğlu & Berköz, 2016; Talischi & Rezaei, 2019; Ujang et al., 2014). It is envisaged that these parameters will be evaluated in the study.

3.3.1.1 Frequency of Use

According to the literature review findings investigating the relationship between place attachment and public spaces, the frequency of use of public spaces has been an effective factor that increases the level of place attachment. It is also one of the main characteristics to demonstrate whether a place is a favorite place for people. According to Moore and Graefe (1994), the frequency of visits to a place increases dependence on the environment, leading to an emotional attachment to that place.

How often a person visits and uses a public space can affect how he or she perceives that place. Although the frequency of visits to the public space positively affects the place attachment, the extent of this relationship may change with other factors. Studies demonstrated a positive correlation between the frequency of use, the time spent in the area, and the place attachment.

3.3.1.2 Length of Engagement and Level of Familiarity

Research demonstrated that increased engagement length contributes to developing a strong sense of familiarity. This creates a stronger sense of belonging and encourages attachment. Studies and definitions of place attachment have presented the length of engagement with a place (time spent in a place) as one of the factors that positively affect place attachment (Altman & Low, 1992; Hay, 1998; Moore & Graefe, 1994; Smaldone, 2007). It has been suggested that time and experience in a place are important for the person-place relationship and emotional bonds. Also, the length of a relationship with a place can be affected by the degree of comfort that is central to the feeling of attachment to that place. Physical and psychological comfort is important for optional and social activities in public spaces. The more people are comfortable in public spaces, the more time they spend in them, reinforcing their feelings towards those spaces and increasing their attachment. Time has been found to play an important role in attachment to place in public spaces, especially in recreational areas. In the study conducted by Moore and Graefe (1994), the place attachment developed by users to rail trails, a recreational environment, was examined. They stated that longer length of engagement, more frequent use, and proximity to recreational trails contributed positively to the attachment.

Familiarity is enhanced with social interaction between people and more with time spent in public spaces. Social interaction between people in places enhances familiarity with those places. The level of familiarity is linked to the place attachment concept. As Scannell and Gifford (2010a) cited from Fulilove (1996), familiarity

with a place is considered the cognitive component of place attachment. To attach to a place, it is necessary to know the place and the details in that environment.

3.3.1.3 Interaction and Activities

Social interactions and activities within public spaces positively influence people's quality of life. One of the most critical factors that increase the level of place attachment and make people stay and engage in public spaces longer and come more often is the extent to which the space allows for activities and interactions. Public spaces allow people to enliven and enrich public life by offering various activities. People use these areas to relax, promenade, participate in different activities, socialize, and purchase products such as food, drinks, etc. The diversity of these activities also allows for variety in people. Public spaces enable the fulfillment of people's physical and social needs. Activities emerge spontaneously because people gather together and move in the same place. For this reason, it makes public spaces significant context as a social environment (Ujang et al., 2014). Studies indicated that public spaces that provide opportunities for activities have a positive effect on place attachment (Düzenli et al., 2018; Karami et al., 2014; Selçuk & Türkseven Doğrusoy, 2021; Ujang, 2008; Ujang et al., 2014). Activity is an important element that increases engagement and attractiveness. The relationship between people and the activity creates a sense of belonging, promoting engagement, familiarity, and attachment to places (Ujang, 2008). Outdoor activities such as walking, sitting outside, talking, listening, standing, playing, dancing, exercising, conversations, and a meeting should be responsive to people's need to move easily from one place to another (Gehl, 2010). In addition to these functional needs, public spaces should also provide participation in meaningful activities, individually or as a group, that build identity and promote attachment to place.

Public spaces provide people with opportunities such as physical activity, social interaction, enjoyment of nature, relief from stress, etc. One of the important features of public spaces is that they provide the necessary places for social interaction. As

Ujang et al. (2014) cite from Hari and Kujala (2009), social interaction is defined as the process of mutual stimulation and interaction and shared experience between at least two people. Public spaces allow people to meet and interact through activities. Studies indicate that the higher the level of social interaction in a place, the higher the attachment to that place.

3.3.1.4 Accessibility

Accessibility is one of the must-have features of public spaces. While public spaces may be in a central and easily accessible location in a city, they may also be located at the periphery of the city or in a more challenging and limited location in terms of transportation. If public space is accessible to everyone at all times, people use it more often in their daily lives and spend more time there. This strengthens their communication and bond with this place. The accessibility function in the public space is an important factor influencing how much people use a space and interact with others, providing a meaningful experience in the urban environment (Ujang et al., 2018).

3.3.1.5 Sense of Security

According to Maslow's hierarchy of needs, the second basic need of the individual after basic needs such as food and water has been determined as safety and security (Maslow, 1954). The need for protection in spaces is among the users' important needs. Regarding people's use of and interactions in public space, the publicness of the public space is directly related to feeling safe. Public spaces that consider the security factor is used and visited by more people. People spend more time where they feel safe. For this reason, people's attachment to such places may be strengthened. In addition, it is mentioned that there is social and psychological comfort where people have a sense of security (Carr et al., 1992). Social and psychological comfort is an important need that affects people's experiences in

public spaces. It includes a sense of security in that people, and their belongings are not vulnerable (Carr et al., 1992). Safety or feeling safe is not always directly related to the actual crime. People may feel comfortable and safe using public spaces where they can be seen and heard by others, with good visibility, legibility, and adequate lighting (Belge, 2021).

3.3.1.6 Physical Attributes

Public spaces are places that have different forms, sizes, and functions. Carmona et al. (2008) analyze the critical elements of public spaces or, in other words, "the kit of parts" under four different headings: buildings (walls, structures, windows, corners, signage, etc.), infrastructure (roads and cycle lanes, bus stops, street lighting, traffic lights, public toilets, etc.), landscape (trees, lawns, and verges, planters, paving, steps, public art, street furniture, etc.), and uses (events, street entertainment, gatherings, markets, etc.) The three of these key elements, buildings, infrastructure, and landscape, form the physical urban structure. In many studies examining the relationship between public spaces and place attachment, physical features have been presented as a factor affecting the attachment (Karami et al., 2014; Karsono et al., 2019; Sattarzadeh, 2018; Ujang et al., 2014). Many elements such as building aesthetics, density, form, presence of green areas, landscape elements, comfort and adequacy of the sitting areas, and the usefulness of the fitting elements are related to the physical properties of the area. Public spaces that satisfy people in terms of their physical setting are preferred and used by people. For this reason, people's relationship with these places becomes stronger.

The relation between the parameters of place attachment and public space is summarized in Table 3.2. As stated before, the predictors of place attachment have been categorized into three groups: socio-demographic, social, and physical in the study by Lewicka (2011). These categories have been used for gathering the terms place attachment and public space on common ground. The predictors of place attachment have been determined by analyzing several studies, details of which are

given in Table 2.1, and the parameters of place attachment in public space have been matched with these predictors. Also, the keywords used in examining studies and showed up during the scanning of the research are given in Table 3.2.

Table 3.2 The Relation Between Place Attachment and Public Space (Source: Author)

Class	Predictors of Place Attachment	Parameters of Place Attachment in Public Space	Related Keywords
Socio-demographic	Length of residence Age Gender	Age Gender Education Income Level	- Age factor -Gender-based preference
	Education Home ownership Mobility	Ethnicity	-Cultural background -Ethnic group
Social	Time	Frequency of use Length of engagement	-Increase in time spent -Dependence on the environment
	Social ties Interaction & Activities	Interaction & Activities	-Improved experience, memory -Diversity in people -Observation -Social interaction -Attractiveness -Livable and dynamic spaces

Table 3.2 (cont'd)

	Sense of security	Sense of security	-Social and psychological comfort -Feeling safe -Increase in time spent -Increased visibility
Physical & Environment	Accessibility	Accessibility	-Physical characteristics -Increase in time spent
	Architectural Features & City Planning Availability of Facility and Services	Physical attributes	-Basic needs -Tranquility, rest -Enjoyment of people -Exploration of space

The main parameters of place attachment in public spaces when research studies have been examined according to the types of public spaces were presented in Table 3.3. These parameters were classified as physical, social, and socio-demographic parameters. The shared parameter of place attachment in parks was identified as the frequency of use based on the research. The studies conducted on coastlines, squares, and urban spaces in the neighborhood show that the respondents attach to these public spaces because of the existence of interaction and activities considerably. In the research carried out on university students, it is observed that students have a place attachment to the faculties' open public spaces when there are green spaces (physical attributes) and interactions and activities. Findings achieved from the literature have been presented and summarized in the table below.

Table 3.3. Parameters of Place Attachment Enhancing in Public Spaces According to Types of Public Spaces (Source: Author)

Type of public space	**Class**	**Parameters of enhancing place attachment in public space**	**Source**
Parks, paths, playgrounds	Socio-demographic	-Majority of respondents' age: 18-25	Mantey (2015)
	Social	-Frequency of use -Social interaction	
Parks	Socio-demographic	-Majority of respondents' age: 20-40 -Majority of respondents' education level: high school-university	Sıvalıoğlu & Berköz (2016)
	Social	-Frequency of use -Sense of security	
Parks	Physical	-Physical Attributes: green spaces, landscape characteristics	Ujang et al. (2014)
	Social	-Frequency of use -Social interaction	

Table 3.3 (cont'd)

Coastline	Socio-demographic		Selçuk and Türkseven Doğrusoy (2021)
	Social	-Interaction and activities	
Square	Socio-demographic	-Majority of respondents age:18-25/25-49	Karsono (2019)
	Social	-Length of engagement and level of familiarity -Interaction and activities	
	Physical	-Physical attributes -Accessibility	
Square	Socio-demographic	-Majority of respondents' age: 45-55 -Majority of respondents' education level: university -Length of residence	Sattarzadeh (2018)
	Social	-Interaction and activities -Sense of security	
	Physical	-Physical attributes: seating and resting areas -Accessibility	

Table 3.3 (cont'd)

Urban space in a neighborhood	Socio-demographic	-Majority of respondents' age: 29-39 -Length of residence	Karami (2014)
	Social	-Interaction and activities -Sense of security	
	Physical	-Physical attributes: building architecture design	
Urban space in a neighborhood	Social	-Length of engagement -Frequency of use -Interaction and activities	Moore & Graefe (1994)
Faculties' open public spaces	Socio-demographic	-University students	Talischi & Rezaei (2019)
	Social	-Interaction and activities	
	Physical	-Physical attributes: the presence of architectural elements and green spaces	

Table 3.3 (cont'd)

Faculties' open public spaces	Socio-demographic	-University students	Hanan (2013)
	Social	-Interaction and activities	
	Physical	-Physical attributes: the presence of green spaces, sitting facilities, shaded areas -Accessibility	
Faculties' open public spaces	Socio-demographic	-University students	Düzenli et al. (2018)
	Social	-Sense of security -Interaction and activities	

According to Table 3.4, most of the studies have argued that the parameters of interaction and activities and physical attributes are the most common parameters that affect the place attachment in public spaces. In addition, frequency of use and sense of security are also seen among the important parameters affecting the attachment in common in these studies.

Table 3.4. Place attachment in public space parameters in the literature (Source: Author)

LITERATURE	Frequency of Use	Length of Engagement-Level of Familiarity	Interaction - Activities	Sense of Security	Accessibility	Physical Attributes
Moore & Graefe (1994)	+	+	+		+	+
Ujang et al. (2014)	+		+			+
Sıvalıoğlu & Berköz (2016)	+			+		
Mantey (2015)	+		+			
Karsono (2019)		+	+		+	+
Düzenli et al. (2018)			+	+		
Hanan (2013)			+		+	+
Talischi & Rezaei (2019)			+			+
Selçuk and Türkseven Doğrusoy (2021)			+			
Sattarzadeh (2018)			+	+	+	+
Karami (2014)			+	+		+

In this chapter, the literature on place attachment in public spaces was examined in depth and the factors affecting the attachment were listed. Accordingly, the fact that the public space enables different activities and allows interactions with other people has emerged as the parameter that most affects attachment. This shows how the social aspect of the place plays an important role in increasing its quality of this place. In addition, the physical attributes of the place appear as a feature that increases the frequency of people's use of this place and the time they spend in this place, thus significantly affecting their attachment to this place.

CHAPTER 4

COVID-19 PANDEMIC AND PLACE ATTACHMENT RELATIONS IN THE CONTEXT OF PUBLIC SPACE

4.1 COVID-19 Pandemic Overview

People have had to struggle with infectious diseases since ancient times. An epidemic can be considered as a sudden increase in the number of diseased cases in a given certain population in a short period (Centers for Disease Control and Prevention (CDC), n.d.). Major epidemics affecting continents are called “pandemics”. WHO defines a pandemic as the worldwide spread of a new epidemic disease. The COVID-19 disease has been declared a “pandemic” by the World Health Organization as of 11 March 2020 (WHO, 2020).

COVID-19 disease, which started in China at the end of 2019 and spread to the whole world in March 2020 and caused severe acute respiratory syndrome, is a common, contagious, and significant stress factor. Because there is no available treatment definitively, and even the causes and symptoms remain unclear, containment measures have begun to implement in many countries that radically change people's daily lives, routines, and habits. In most countries, international borders have been closed and non-essential travel restricted. Stay-at-home orders were issued that restricted partially or fully personal and social interactions. In-person (face-to-face) training in educational institutions has been postponed, and applications in education have moved to digital platforms, as in most fields. Most workplaces have made it mandatory for their employees to work from home and have attempted to adapt to the new normal. All these were declared to be significant measures implemented to protect the health of the global population and prevent the spread of infection. Although these social distancing measures aim to prevent the virus's spread, many researchers believe that these place confinements have negative consequences on

human health (Ramkissoon, 2020). COVID-19 has caused an economic slowdown and critical and adverse effects on people, communities, and public health worldwide. Due to the place confinements imposed during the COVID-19 pandemic, governments have restricted people's gatherings, traveling, discovering new places, participating in events, having social interactions, and experiencing the physical environment. The resulting feeling of being displaced, constricted, and disoriented may have long-term effects (Counted et al., 2020).

The COVID-19 epidemic, which has affected the whole world since the beginning of 2020, transformed social life and the way the built environment is used in an unprecedented way and continues to do so. COVID-19 is not the first epidemic the earth has faced. Moreover, it is not the most deadly of all epidemics. Looking at recent history, the SARS epidemic that emerged in 2003 was 9.6% with 774 deaths out of 8098 cases; The MERS-COV epidemic that emerged in 2012 had a death rate of 34.4% with 858 deaths out of 2494 cases (Ak, 2020). However, the COVID-19 outbreak has a mortality rate of 2.03%, with 4,854,953 deaths out of 238,065,643 cases detected globally since December 2019 ("Johns Hopkins University of Medicine," 2021). However, considering the epidemics that have occurred throughout human history, it can be said that COVID-19 is the epidemic disease with the broadest spread area on a global scale. In addition to the extremely high transmission coefficient of the virus, some anthropogenic activities, which are different from previous epidemics, were also very effective in forming this situation. These include rapid population growth, global population mobility, climate change, plastic pollution, destruction of natural habitats and consequent endangered species, industrial agriculture, rapid consumption of resources, and urban sprawl (Rice, 2020). Throughout history, epidemics have created important turning points in shaping the urban space where the population is concentrated (Ensarioğlu, Arın, 2021). All epidemics mentioned above that humanity has experienced have been an important part of the city. However, when urbanization has increased significantly and has taken over the world, the concepts of epidemic and city interact considerably (Sayın & Bozkurt, 2020).

It is known that many diseases similar to the COVID-19 pandemic have emerged in humanity's history. Some of these diseases have been cured within the scope of human curiosity and studies, and some of them mutated and self-destructed. In epidemics where human-to-human transmission is high, the production of a drug or the places where precautionary practices are common during the disappearance of the epidemic is dense urban areas. Urban spaces are where people interact with social and physical proximity at any time (production and trade areas, socializing spaces, etc.). When the spread of the plague, also known as the ”black death,” which is accepted to have emerged in China in 1348, is one of the deadliest diseases in human history and is known to cause the death of 200 million people, progressed through the trade centers of the period depending on human mobility. The Mongolian soldiers' siege of the Genoese colony in Crimea in 1345 and the hurling of the dead with a catapult caused the disease to spread to Kefe, the province of Crimea. It was observed that the disease spread in Europe as a result of twelve Genoese ships transporting the goods they bought from Kefe, a place frequented by European traders, to the port of Messina, Sicily (Genç, 2011). In 1918, the spread of the epidemic known as the Spanish flu, which caused the death of 50 million people worldwide, was also through human movements. It was first seen in the USA and spread to England, France, and Spain during the First World War. Later, it was seen that the epidemic spread to many countries of the world. As with the plague, the Spanish flu is known to spread from ports and battlefields due to trade and wars (BBCNews, 2021). Compared to the spread of the plague, it is seen that COVID-19, which emerged today after approximately 650 years, spread in a much shorter time in the world where human interaction and population increased, and transportation facilities developed (Çam, 2020).

Physical activity and mobility have a significant place in human life since it positively affects an individual's psychological and physical health. According to research in the health literature, when people’s physical activities are restricted by limitations such as place confinement, they feel a lack of independence, and their mental health is adversely affected. The pandemic has had significant social,

environmental, and economic impacts at all levels and in all areas of society. With the restriction of movement and the quarantine measures introduced, many people's perception of the place has changed. In addition, these place confinements applied during the pandemic also bring feelings of isolation, emotional breakdown, and depression (Ramkissoon, 2020).

One way to improve people's moral motivation and well-being during the pandemic is the attachment to a place. According to the model proposed by Ramkissoon (2020) in his study, place attachment has four sub-dimensions: place dependence, place identity, place effect, and place-social bonding. Place dependence refers to how a place most effectively meets the outcomes that individuals desire and expect. Place identity refers to the relationship that individuals establish with a place. It also reflects the meanings they attach to a place and their sense of belonging. Place effect is the emotional bond that individuals form with a place. Place social bonding are also social ties established in a place. According to the literature, pro-environmental behaviors and the social participation of individuals are factors that positively affect their attachment to a place. People displaying these behaviors may become emotionally attached to their home or community environment, increasing their well-being. Dependence on the distinctive attributes of places also contributes to this well-being (Ramkissoon, 2020).

4.2 The Notion of Suffering in the Context of Place Attachment During the COVID-19 Pandemic

Since the COVID-19 pandemic broke out in late 2019, the loss has emerged as part of people's experiences in their lives, individually or as a community. While the loss of life was the primary growing concern, many other losses have occurred alongside the adverse health effects of COVID-19. Community mitigation strategies have been implemented in many parts of the world to prevent the spread of the SARS-CoV-2 virus. Many countries have taken strict quarantine measures, such as stay-at-home orders, long-distance travel bans (applicable within the country or abroad), curfews,

postponing community social gatherings, and suspending non-essential face-to-face activities. In this period, secondary losses were also experienced intensely (Counted et al., 2021). To illustrate, people have mostly lost their old everyday routines, face-to-face contact, and community-based activities.

4.2.1 People-Place Relations and Place Attachment Disruption

Places are important centers of people's lived experiences. For this reason, they act as a bridge connecting people and the natural order. They consist of places, meanings, real objects, and ongoing activities (Relph, 1976). They are significant sources of individual and communal identity (Relph, 1976). The experiences of the place can vary on different scales. However, they are whole entities that consist of natural or man-made objects, activities, functions, and meanings (Michael Larice & Elizabeth Macdonald, 2013). Place refers to any valuable environmental space that has meaning (Sime, 1986). Many place-based concepts (such as place attachment, place identity, place dependence, sense of community, and sense of place) have emerged and been explored to explain a person's well-being, which can be influenced by their relationship with the environment. People develop bonds with places through their personal experiences with the environment. Place attachment is commonly used to describe the bonds formed in human and place relationships.

Places of attachment contribute to the establishment of psychological balance by providing the development of positive emotions and the reduction of stress. It enhances and supports the well-being of people's bonds with places (Counted et al., 2021). When these bonds are negatively affected and disrupted, it may cause deterioration in well-being. Disruption of place attachment occurs when people are separated from these places that are meaningful and important to them (Scannell et al., 2021). Other types of losses may occur when place attachment is disrupted. Therefore, this experience may have devastating consequences. Losses resulting from the disruption of place attachment may negatively affect the individual's general orientation system, which shows how the individual makes sense of and

relates to the world (Counted et al., 2021). Since this disruption in attachment to places decreases the individual's social interaction and weakens his/her social bonds, it can also impair well-being. The state of distress that results from all this deterioration may cause suffering.

4.2.2 The Notion of Suffering

The concept of suffering most commonly describes the subjective experiences of distress encountered by people with physical pain, illness, or symptoms. According to historical research and records, the experience of suffering indicates that it diminishes well-being among people (Cowden et al., 2021). In addition, suffering can stem from a wider range of domains that exceed the limits of physical health, such as psychological causes (mental health problems), relational causes (social disconnection or isolation), spiritual causes (mental displeasure), or systemic causes (poverty). Furthermore, the causes of suffering and its object may be various. The disruption of place attachment during the COVID-19 pandemic may be considered a primary cause of a person's suffering. However, the object of the suffering may be a sense of identity loss (Counted et al., 2021). Suffering can be identified as a multifaceted concept. In general, it includes the intensity of the negative experiences that causes the pain or the level of intolerance in the process of that situation. This process adversely affects social relationships, disrupts a person's life purpose, undermines their belief in the world, and affects their personality (Counted et al., 2021). Kanık (2018) asserts that the effects of forced displacement on people's psychological states are one of the first studies that show the importance of the relationship established with places, referring to Fried. In interviews conducted with people living in Boston a few years before or after they moved, it has been observed that this process is similar to a grieving process. It has been determined that people's expressions related to space include a painful sense of loss, psychological stress, social stress, somatic symptoms, feelings of helplessness, and anger toward displacement (Yenice Kanik, 2018).

During the COVID-19 pandemic, several disruptions of place attachment emanated. While some of these may be less frequent (e.g., emplacement abroad due to the closure of international borders), others have been experienced by most people in most parts of the world (e.g., restricted social activities). Community mitigation strategies have resulted in the most prominent causes of place attachment disruption. In line with the measures taken to balance social distance, access to places of attachment, which is part of people's daily lives, has been limited. If restrictions on these places, which support people's well-being, are lifted, there may be concerns about the transmission of the virus (Counted et al., 2020). Other forms of place attachment disruption have had major effects on certain individuals and groups. Most people can describe their experiences of being disconnected from the place during the pandemic as parallel to the suffering. People from all over the world have been unable to access their places of attachment at certain times due to the restrictions imposed. While a person's suffering may be impaired attachment to the place due to the pandemic, its object may involve secondary losses due to these places (e.g., life balance, sense of peace, etc.) (Counted et al., 2021). According to Scannell and Gifford (2017), the disruption of place attachment may impact a person's durableness.

Another factor that can accelerate or increase suffering during the pandemic is the uncertain timeline. In some countries worldwide, quarantine periods and lockdowns have been continuously extended. On the other hand, in some countries, such as Turkey, the public health measures taken were relaxed from time to time and restarted intermittently. Such experiences caused ambiguity for people and affected the limits of their tolerance. Losses due to disruption of place attachment had to be endured indefinitely. Also, since governments implemented community mitigation strategies, individuals had limited control over the suffering they endured. This sense of weakness could intensify suffering (Counted et al., 2021).

The COVID-19 pandemic has become a significant factor undermining the sense of place attachment of people around the world. The pandemic has created the need to

understand how individuals experience and respond to the disruption of their place attachment. Situations of suffering and distress occurred with the deterioration of attachment to place as an essential factor of the pandemic. When place attachment is disrupted, it may have damaging impacts on well-being. The consequences of people's separation from their places of attachment can be catastrophic in compulsory or voluntary emplacement (Scannell & Gifford, 2017a). According to Counted et al. (2021), while these situations may not apply to everyone, they can provide insight into the implications of disruption of place attachment for promoting well-being.

4.2.3 The Phases of Place Attachment Disruption: Protest, Despair, Detachment

Separation from places of attachment can lead to separation distress (Counted, 2018). During the COVID-19 pandemic, separation distress may appear when the relationship of people with places that are part of their daily life routines is threatened by the public health measures taken. To illustrate, having to stay at home within safety measures can also trigger separation distress. Therefore, a person does not have to leave a place before experiencing separation distress physically. Separation of place attachment may result in maladaptive or adaptive reparative responses. This process can be defined as the disruption of attachment in the attachment literature (Counted et al., 2021).

According to Counted et al. (2021), attachment disruption has three phases. All three phases are related to the cognitive, affective, and behavioral aspects of human experience. For instance, both the protest and despair phases involve behavioral expression, but the types of negative impacts in each phase vary from person to person. The protest phase begins when the object to which a person is attached no longer satisfies the attachment bond. In the protest phase, the individual's bond with a place that has meaning to him/her is broken or weakened. In line with the social distance and isolation precautions taken in the context of the COVID-19 pandemic,

people could not be outside of their homes unless it was necessary. For this reason, these precautions caused the protest phase to be more intense.

In some cases, the protest phase corresponds to the despair phase. The despair phase emerges with the increase of fear and anxiety about the loss of the bond that a person has established with the attachment object and the hopelessness that he/she has regarding the re-establishment of this bond. As people lose hope of regaining their places of attachment that the outbreak has disrupted, they may experience helplessness and despair. On the other hand, the detachment phase offers the person the opportunity to explore new experiences and relationships that can overcome the loss they have experienced (Counted et al., 2021). In this phase, people begin to re-imagine the places they are attached to, or they start to find other attachment objects as an alternative to the places.

4.3 Change in the Notion of Public Space After the COVID-19 Pandemic

Public space, in its simplest definition, refers to places shared by every individual in society and accessible to everyone. Every part of society has the right to use public space equally. For this reason, it is an important point in the definition of public space that it is open to the whole society. The global pandemic process is changing and transforming public spaces. With the COVID-19 pandemic, there have been significant changes in the number of places people visit. At the beginning of the COVID-19 pandemic, between March-June 2020, public spaces were left empty within the framework of the measures taken due to the increasing number of cases, and society was not aware of what kind of situation it was faced with. Similar to Turkey, public spaces in the world could not be used because of the unknowns people experience against COVID-19 and the precautions taken (Belge, 2021). Many public spaces around the world have been abruptly closed or subjected to strict regulations to limit the formation of large public gatherings and the further spread of the virus. Public spaces have also lost their accessibility before, with the restriction of mobility, the implementation of quarantines, and increased social distance and isolation

measures. According to Paköz et al. (2021), the COVID-19 pandemic will influence the evaluations and perceptions of public spaces. The use of public space has been reduced with the social distance restrictions and political measures taken during the epidemic. As in many countries, the government in Turkey imposed restrictions on the use of public spaces in the first phase of the pandemic. After the first case was announced, face-to-face education was suspended, and then distance education was started all over the country and moved to online platforms. After these implementations, intercity travel was restricted, and curfews were imposed on weekends and holidays. For certain age groups (under 18 and over 65 age), incessant restrictions were applied. Access to public spaces was banned, and places of entertainment and cafes, and restaurants were closed. Religious activities were also restricted. Considering the number of cases, the restrictions started to be lifted gradually as of June 1, 2020. Concerning the need for socialization and coexistence, which is an important part of human needs, people have produced solutions for living with the crisis. This situation has changed the way citizens use public spaces over time. Because in human nature, there is a need to be together, socialize and interact. Thus, society started to create its own safe public space (Belge, 2021).

Public spaces are important focal points of cities, including social sharing and interactions. The quality of public spaces can be considered equivalent to the quality of urban life and the city. For this reason, one of the important criteria of urban planning is that these areas are accessible and designed to serve the user. People establish strong emotional bonds with cities and urban spaces by developing a sense of place. In this way, they can also develop a sense of place attachment. Although this bond may change over time, it depends on the sense of place fundamentally disrupted by COVID-19. With the COVID-19 outbreak, social life was affected significantly and interrupted at certain intervals by the measures taken. As long as this pandemic, which greatly affects the use of public spaces, proceeds, the impact on these spaces will be even greater. The outbreak causes transformation and major changes in cities around the world. Urban life and its many activities suddenly disappeared. According to Paköz et al. (2021), there will likely be a shift towards

small-scale public space planning rather than designing large shopping malls and squares, which are large and crowded places. In such places, it may be possible for people to prefer open-air shopping streets for reasons such as crowds and artificial ventilation.

In the first period of the COVID-19 pandemic, implementations that restricted the use of public spaces decreased chance encounters and social communication, and social interactions. With the right design decisions, it seems possible to transform the longing for these public spaces that could not be used during the epidemic into places that promise a higher sense of community (Paköz et al., 2021).

Since public spaces have a transformative effect on individuals, they can influence and shape their daily lives. For this reason, the daily lives of individuals and public spaces cannot be considered independently. Any intervention in the city will have a direct impact on individuals. Public spaces are important places that enable the interaction of society and space, meet the social needs of individuals, and enable encounters. The lockdowns due to the pandemic and the closure of socializing areas again emphasized the importance of public spaces in daily life because public spaces could not fulfill their duties during the outbreak. During the COVID-19 pandemic, people spent their daily lives mostly at home. They met the concept of public space and their social activity needs in their homes. In this period, both the open urban spaces near the neighborhood and the streets have become significant and valuable areas for people. This process has shown that humans are the subject of the public space and that the public spaces in the surrounding are limited and insufficient.

CHAPTER 5

CASE STUDY

In this chapter, the study area is explained, and the methodology of this study, that is carried out with 60 university students at Middle East Technical University (METU) to evaluate the change in university students' place attachment to public spaces during the COVID-19 pandemic, is presented.

5.1 Study Area

5.1.1 Middle East Technical University

It was established in 1956 as the Middle East Institute of Technology and was renamed Middle East Technical University, with the law enacted in 1957. In 1961, the current campus plan of the Middle East Technical University was obtained through the national project competition. It took until the end of the 1970s to complete the project's construction, of which Altuğ and Behruz Çinici were the winners. Middle East Technical University is located southwest of the city of Ankara and 5 km from the city center. The campus area is 4,500 hectares, and the forest area is 3,043 hectares. In addition, the campus includes Eymir Lake within its borders. The campus is located in an area bounded by Eskişehir Highway and Konya Highway. Considering that both roads are important for Ankara transportation, it is seen that the METU campus is an accessible place, including public transportation. Transportation to the campus can be provided by bus, minibus, and metro. The university campus is one of the critical examples and pioneers of modern Turkish architecture.

Today, the campus comprises nine regions: academic region, dormitories, faculty housing, sports areas, cultural and commercial areas, service buildings, METU Technopolis, METU College, and METU Forest (Akman, 2016).

The campus pattern is organized along the pedestrian circulation axis called "alle" (Büyükcivelek et al., 2016). This 1.5 km pedestrian spine is the heart of the social life on campus. This backbone, where the crowd gathers, and people interact, is called a "forum" by Çinicis (Büyükcivelek et al., 2016). The spine is not only an access road but also an interaction corridor that connects the natural and man-made elements that form the campus.

Figure 5.1 The Location of METU (Source: Author)

According to the plan of Çinici, METU is divided into three districts, the academic zone, the center zone, and the non-academic zone, according to their functions.

- The academic zone connects the faculties of Administrative Sciences, Education, Arts and Sciences, Architecture, Engineering, and Agriculture. It was designed as a forum reserved for pedestrians and had intense activity.
- The center zone consists of the library, the administrative building, and the grand auditorium located in the eastern part of the alley. To the south is the cafeteria.
- The non-academic zone consists of dormitories, academic housing, social facilities, and sports areas.

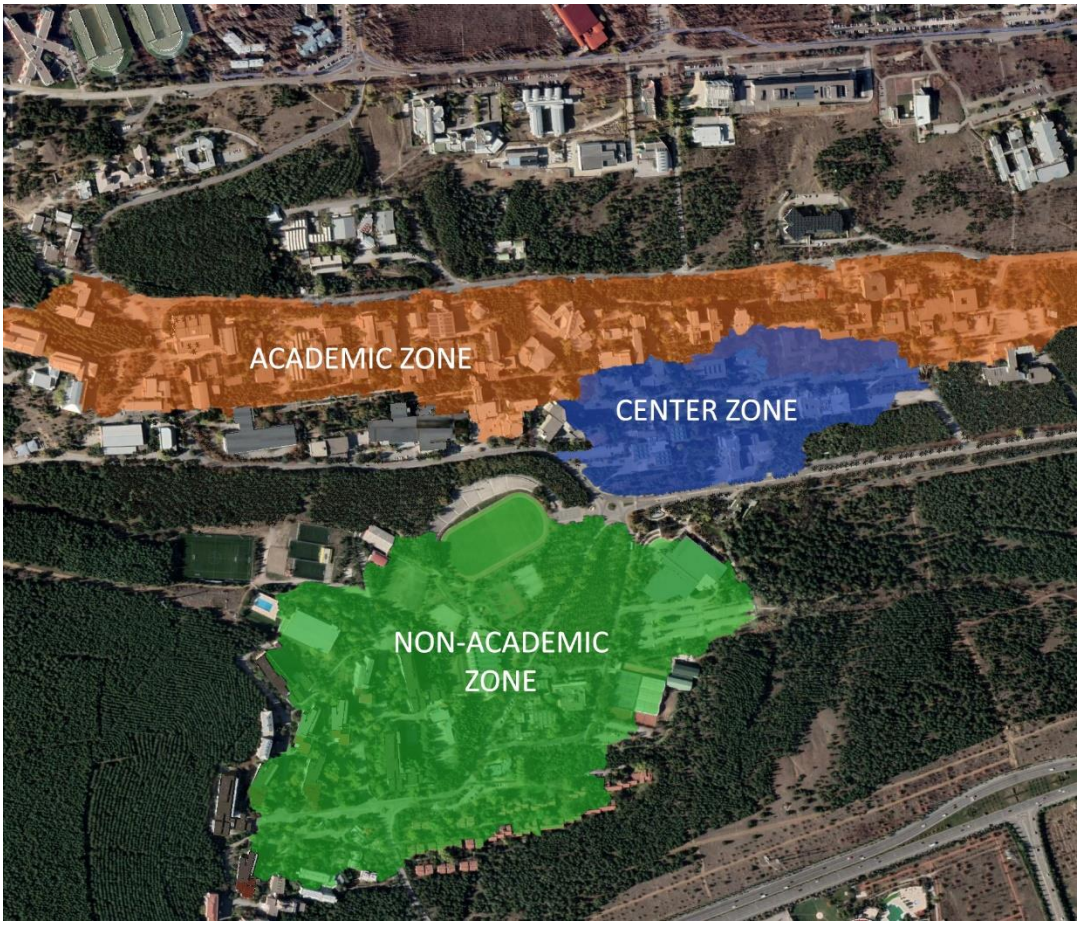

Figure 5.2 Three Districts of METU Campus (Source: Author)

Although the METU campus was designed to be outside the city, the city has grown in rapid and unplanned urbanization since the 1960s. With the expansion of the city, the built-up areas on the campus also expanded rapidly. The campus developed spontaneously between 1980 and 1990 and the built-up areas expanded to the west (Akman, 2016). This expansion includes METU Foundation Primary School (built-in 1989) and High School (1994) in the northwest, METU Technopolis (Teknokent-built in 2000) in the west, and METUtown (ODTÜKent-built-in 2000) in the southwest (Akman, 2016). This study focuses on open public spaces that are mostly used by students, and these places are usually located in the first planned area (the plan of Çinici). In this study, tennis courts (built-in 1984) and Çatı Cafe (built-in 2000) are among the study areas, and these areas were also included in the campus after Çinici's plan.

5.1.2 Open Public Spaces on Campus

The physical environment of university campuses is an important feature that affects students' interest in these places. The campus is formed in line with the relationship between an environment's social and physical aspects. Students interact in different physical environments, such as indoor and outdoor activity areas on campus and buildings that differ physically from each other such as form, color and layout, parking lots, and landscape areas (Hanan, 2013). It is very important to have open public spaces on campus that allow people to interact and respond to their needs. Spending time in these places is an indispensable element of healthy campus life. Students want to participate in social activities on campus and spend time with people. The most important places that allow these are the open public spaces on campus. These areas are more important and memorable places for students than any building.

Many important open public spaces make the campus livable at METU. These open public spaces, which students prefer and spend a lot of time with, can be listed as follows: Devrim Stadium, the front yard of the Physics Building, the front yard of

the Mathematics Building, the KKM entrance, the front yard of Çatı Cafe, Çarşı, tennis courts, the front and back yard of the Library Building,

Devrim

Devrim is one of the most important gathering places of METU. Devrim, which students prefer for many different and varied activities, is one of the most important open public spaces in METU. It is also one of the most important symbols of METU. Both students and academics frequently use this area. In this area, it has been observed that activities such as eating-drinking, walking-running, exercise sports, chatting, meeting, taking pictures, watching the people around, and spending time during lunch break. There is the opportunity to sit on the grass field and in the tribunes. It also hosts events such as university graduation and spring festival.

Figure 5.3 Devrim (Source: Author)

Front Yard of the Physics Building

One of the most popular open public places at METU is the Front Yard of the Physics Building. This building is located in open public spaces of faculty buildings in the academic zone. Since this area is located at the intersection of different pedestrian paths, it is an open public space visited and frequently used by students from different faculties in METU. The area is located between the library and the rectorate buildings. The area provides opportunities for activities such as eating and drinking, talking, chatting, meeting, taking pictures, watching the people around, working, and spending the lunch break. There is a slope in the area on both sides of these buildings. Although there is no seating element, the presence of green areas has increased the interest of people here. There is a slope in the area on both sides of these buildings. This slope provides variety in the students' activities; It allows the use of this area as a grass amphitheater. It also provides isolation at one point from the alle, the main pedestrian axis, which is crowded and constantly used.

Figure 5.4 Front yard of the Physics Building (Source: Author)

The front yard of the Mathematics Building

Another place mainly used is the front yard of the Mathematics building. This area is located on the main pedestrian axis called the alle, directly opposite the library's main entrance. This area, completely closed to vehicle traffic and easily accessible to pedestrians, is frequently preferred by METU students. As in the front yards of the Physics Building, it provides opportunities for activities such as eating and drinking, talking, chatting, meeting, taking pictures, watching the people around, working, and spending the lunch break. Although the area has no seating elements, it is covered by lawns where students sit and engage in different activities.

Figure 5.5 Front yard of the Mathematics Building (Source: Author)

KKM Entrance

METU Culture and Convention Center, in other words, KKM, is an important place symbolizing the social, cultural, and scientific aspects of METU. The entrance of the

venue, which hosts many cultural events, is a place preferred and spent by students. Students and academic staff show great interest in the concerts held here at various times during the academic year and as part of the spring festival. The presence of green areas in the front yard of this building that can be used as a tribune and the fact that it is a spacious environment are why students and academics prefer this place. In addition, this place is one of the stops of the ring buses and is one of the important meeting points used within the campus.

Figure 5.6 KKM Entrance (Source: Author)

Çatı Cafe

Çatı Café is located on the main pedestrian axis where the crowd gathers and people interact. Since this place is on the main pedestrian axis, it is easily accessible for students. This place has indoor and outdoor options, and both options have seating elements. The presence of trees in its garden and sheltered seating against bad weather conditions make this place frequently preferred. Students can access food-

drink opportunities and establish social interactions here. Çatı Café is often busy at breakfast, lunch, and meal times.

Figure 5.7 Çatı Cafe (Source: Author)

Çarşı

Çarşı is located in the non-academic zone. In this area, there are many commercial facilities such as shopping, gastronomic and entertaining activities where students spend most of their time and engage with these places. In the study conducted by Peker (2010), these areas were defined as the campus heart. This study considers this area a campus heart, which acts as a central core. This area is designed as a center where METU students and campus residents can meet their basic needs. It is located in front of the shopping center with shops such as a bank, post office, hairdresser, bookstore, tailor, pharmacy, and many eating and drinking places. Many pedestrian paths provide access to this area, so it is easily accessible and has a wide variety of visitors and users. The area serves many purposes for students to use and is

considered the heart of the campus. Besides, there is a very large green area with seating elements in front of the shopping center. Considering the area's dense forest, it offers its users shady spots. These features allow students to perform many activities such as resting, studying, eating and drinking, sports, chatting, meeting, etc.


Figure 5.8 Çarşı (Source: Author)

Tennis Courts

Tennis courts are one of the recreation areas located near KKM next to METU Çarşı. It is one of the significant and preferred open public spaces of METU, which is preferred by many students due to the seating facilities under the trees, and provides opportunities for many activities such as having a conversation/chatting with people, meeting with somebody, eating and drinking activities, doing sports, view to a passer-by, and studying.

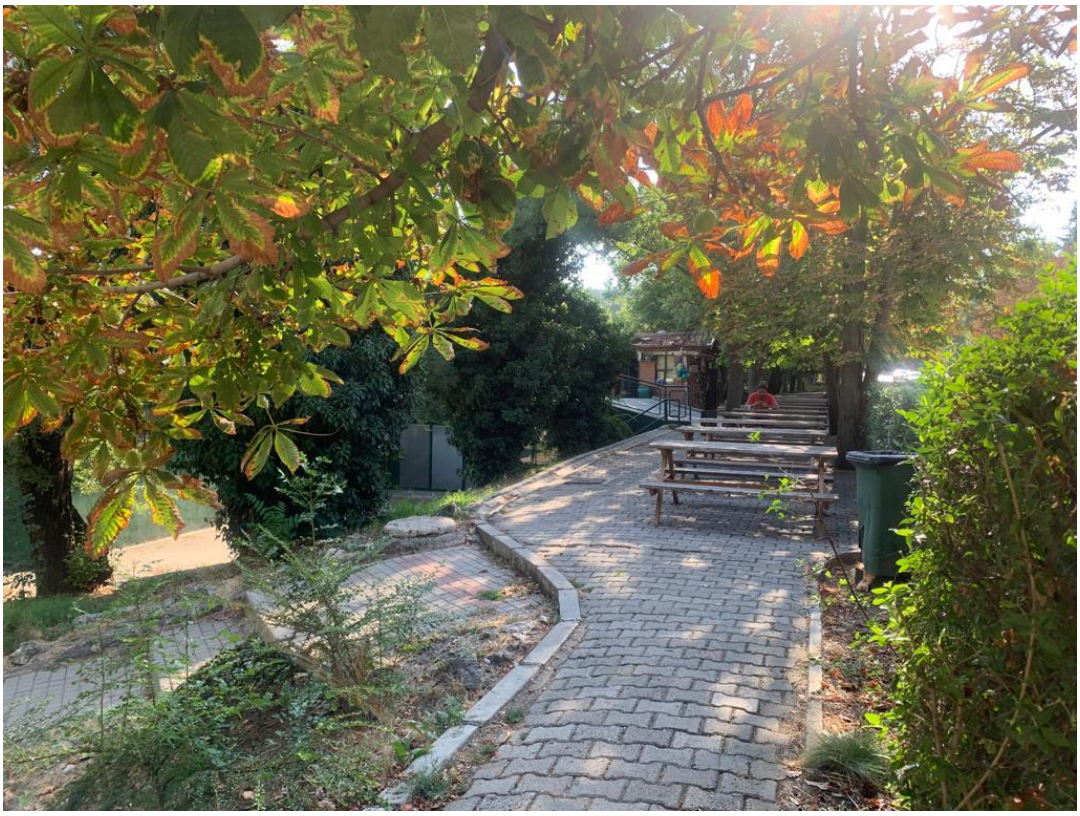

Figure 5.9 Tennis Courts (Source: Author)

Front and Back Yard of the Library Building

The Library is also located on the main pedestrian axis near the rectorate building. It is placed in the center of the university by its location. It serves 24 hours on weekdays and between 9.00 – 23.30 on weekends. The front yard of the library building leads to the main pedestrian axis, while the back yard of the building leads to a garden with trees. Both yards are places where students spend time, interact socially, and rest during study breaks.

Figure 5.10 Front and Back Yard of the Library Building (Source: Author)

5.1.2.1 Selection of Sample Areas

In behavioral sciences, the direct observation method has a crucial role in the connection between laboratory research and real-life behaviors. In this thesis, sample study areas were selected using the observational research method (Altmann, 1974). This study focuses on the change in the attachment of METU students to open public spaces on the METU campus during the COVID-19 pandemic. For this reason, the most commonly used open public spaces on the campus where students can develop engagement and attachment were chosen as study spaces. According to the data obtained from the literature review, the factors that positively affect place attachment are interaction and activity, physical attributes, frequency of use, length of engagement, sense of security, level of familiarity, and accessibility. After this literature review, the places I had the chance to experience and observe in the three years I spent on the METU campus, including the determined parameters, were chosen as a sample study area.

As sample areas; the front yards of the Mathematics Building (1), the front yards of the Physics buildings (2) and Çatı café (3) in the academic zone, the front yard of the Library Building (4) in the center zone, and Çarşı and tennis courts (5) in the non-academic zone were selected.

The reason for choosing these fields was related to the period of the survey. Since the survey was conducted during the examination period, the places that were predicted to be crowded and observed were preferred as the area to be surveyed.

Figure 5.11 Sample areas surveyed in the METU campus (Source: Author)

5.2 Methodology

This section presents the methodological framework of the study. It consists of five subsections and it includes research approaches, variables, respondents, data collection, and data analysis techniques.

5.2.1 Research Approaches

This study explores the following main research question; how does the COVID-19 pandemic affect university students' place attachment to public spaces? This research question aims to help to reveal factors that may influence university students' place attachment in open public spaces at METU. Furthermore, it will help to explore university students' experiences in their attached public spaces during the COVID-19 pandemic and test the existing theoretical arguments.

The main research question contains two-sub questions:

(i) What are the effective parameters of METU students' place attachment to open public spaces in METU?

(ii) Has the COVID-19 pandemic changed METU students' attachment to these places?

Leedy & Ormrod (2001) and Williams (2007) define research methodology as the comprehensive processes a researcher takes before starting a research project. In this context, to evaluate these research questions, this thesis used a mixed methodology which was comprised of qualitative and quantitative research approaches. The qualitative research approach includes collecting and analyzing non-numerical data (e.g. text, audio, video, etc.). It can be used to gather in-depth information about a problem or generate new research ideas (Bhandari, 2020). In this research approach, a social phenomenon is explored from the participant's perspective (Williams, 2007). In the qualitative research method, which aims to describe, explain and interpret collected data (Williams, 2007), researchers can communicate more with the

participants and directly understand their views. A qualitative research approach was used for this study to deeply understand the students' experiences in open public spaces on campus during and after the pandemic and its effect on their attachment to those places. In this approach, interpretations and evaluations were made through the survey with the students, and for this purpose, open-ended questions were asked of the participants. For this approach, data have been analyzed with the content-analysis method.

A quantitative research approach works by quantifying and analyzing variables to obtain results. It entails using numerical data and analysis using particular statistical methods to provide answers such as who, how much, what, where, when, how many, and how. According to the definition by Aliaga & Gunderson (2003) quantitative research methods involve acquiring numerical data and evaluating it using mathematical techniques, meaning statistics, to explain a problem or phenomenon. Creswell & Creswell (2018) and Williams (2007) argue that quantitative research uses methods of investigation like surveys and experiments and gathers data using predefined instruments to provide statistical data.

The term observational research is used to refer to a wide range of non-experimental studies in which behavior is systematically observed and recorded. More generally, the goal is to capture specific characteristics of an individual, group, or setting. Data collected in observational research studies are frequently qualitative, but they can also be quantitative or both (mixed-methods) (*Observational Research*, n.d.). It is an effective research approach in this type of place-related research. Although observation was not used as one of the main research methods, it played a role in determining the places to be surveyed. In addition, observation was used in determining and explaining the characteristics of these places and interpreting the survey results.

The study consists of a survey of 21 questions. The survey contains two different types of questions: open-ended questions and closed-ended questions. Open-ended

questions were asked so that participants could freely give detailed and specific answers. Closed-ended questions consist of multiple-choice questions.

5.2.2 Variables

According to the results of the literature review, predictors affecting place attachment are given in Table 2.1. Later, when the studies investigating place attachment in public spaces were examined, a new parameter series was revealed by overlapping the previously determined place attachment predictors. In this study, the survey consists of a series of parameters that affect the place attachment in public spaces. Since the aim of the study was mainly to investigate the impact of the COVID-19 period on students' place attachment in open public spaces on campus, socio-demographic factors were limited to age and gender only. In addition, since the target group of the study was university students, education level and income level factors were also excluded from the research. As a result, a set of parameters were determined as variables that can be used in this study to explore the change in METU students' place attachment in public spaces during the COVID-19 pandemic. The parameters that have been found to affect the place attachment in public spaces are listed as follows: frequency of use (Mantey, 2015; Moore & Graefe, 1994; Sivalioğlu & Berköz, 2016; Ujang et al., 2014), length of engagement (Karsono et al., 2019; Moore & Graefe, 1994; Selçuk & Türkseven Doğrusoy, 2021) and level of familiarity (Karsono et al., 2019), interaction and activity (Düzenli et al., 2018; Hanan, 2013; Karami et al., 2014; Mantey, 2015; Moore & Graefe, 1994; Sattarzadeh, 2018; Sivalioğlu & Berköz, 2016; Talischi & Rezaei, 2019; Ujang et al., 2014), accessibility (Hanan, 2013; Karsono et al., 2019), sense of security (Karami et al., 2014; Sattarzadeh, 2018; Sivalioğlu & Berköz, 2016), and physical attributes (Hanan, 2013; Karami et al., 2014; Sattarzadeh, 2018; Sivalioğlu & Berköz, 2016; Talischi & Rezaei, 2019; Ujang et al., 2014). Detailed information on these parameters was given in section 3.3.1. Parameters of Place Attachment in Public Space.

5.2.3 Respondents

The survey was conducted with 60 students of different age groups and genders at the Middle East Technical University campus. No questions were asked about their socioeconomic status. All of the participants were students, it was taken into account that it should not be applied to anyone other than the student. 97% of the respondents mentioned that they used these places during the pandemic. 3% of the respondents stated that they were not on campus during this period. No specific equality was aimed at concerning the age of the participants. Students aged 20 and under constitute 5% of the respondents. Students aged 21-24 constitute the majority with 65%. Those in the 25-30 age range have a percentage of 27%. Finally, students over the age of 31 constitute 3% of the respondents. Within gender respect, the equal distribution of male and female participants was considered while applying the survey. With a total of 30 male and 30 female participants; A survey was conducted with one female and one male student taking into account the order. Considering the familiarity of the participants with the campus, no specific equality in the number of students was taken into account. The percentage of people who have been/live on campus for one year is 5%, the percentage of people who have been/lived for three years is %23.3, the percentage of people familiar with the campus for four years is %16.7, the number of people who have been/lived for five years is 21.7%, and finally, the percentage of people who have been familiar with the campus for more than five years is 33.3%.

Table 5.1 Age distribution of respondents regarding gender (Source: Author).

Gender	**Age Group of Respondents**			
	-20	**21-24**	**25-30**	**31+**
Women	0%	37%	10%	3%
Men	5%	28%	17%	0%

5.2.4 Survey

As a data collection technique, a survey was used for this research. The survey is divided into three parts. In the first part, the socio-demographic characteristics of the participants and their familiarity with the campus were asked. In the first two questions of the first part, the age and gender of the participants were questioned. The third question, "*How many years have you been coming to or living on campus?"* was asked to observe whether students' familiarity with the campus and whether the level of familiarity parameter changed their attachments.

In the second part, participants were expected to answer questions according to the conditions after the COVID-19 period (current period). The first two questions of this section, "*When you think of the open public spaces of the METU campus, what are the three places you feel most attached to*?" and "*How do these places make you feel?*", aimed to learn the places where students think they are attached to on campus and their feelings there. These two questions were designed as open-ended questions. The next third, fourth and fifth questions, respectively: "*What type of activities do you participate in these places?*", "*What are the physical attributes that make you feel attached to these places?*", "*How do you access these places?*", were asked to learn about the activities students participated in which are related to the interaction-activity parameter, the physical characteristics they were affected by which is related to the physical attributes parameter, and their access to those places which is related to accessibility parameter. Regarding activities; drinks/eating food, walking-jogging, exercising-sports, having a conversation, meeting with somebody, photography, view to the passer-by, studying, and lunch break was given as options. Regarding physical attributes; green spaces, sitting facilities, presence of water elements, statues, and artworks, landscape, building architecture/aesthetic, cleanliness, and facilities for weather protection were presented as options. Finally, for accessibility; public transportation, private vehicle, bicycle, and walking options were presented. These questions were designed in such a way that they can mark more than one option as closed-ended. Sixth and seventh questions, "*How often do you use these*

places?“, “*How much time do you spend in these places?*”, were asked to find out how often the students used the places they mentioned on campus and how much time they spent there. These questions were associated with the frequency of use and length of engagement parameters. Concerning the frequency of use; every day, several times a week, several times a month, and several times a year were given as options. Also, for the length of engagement; 1-3 hours, 3-6 hours, and 6 hours and above were presented. These questions, like the previous three questions, were prepared in the form of multiple choices as closed-ended. The last question of this section, “*What other factors (individual, social, cultural, etc.) affect your feeling attached to these places?*”, was asked to learn what other factors affect students' attachment to the places they mentioned. Although individual, social, cultural, and other options were given in this question, they were expected to elaborate as open-ended.

In the third part, the participants were expected to answer the questions considering the COVID-19 period. The first question of this section, “*When you think of the open public spaces of the METU campus, were the first three places you felt most attached to different during the pandemic period? Which new places do you have developed stronger attachments?*” was asked to find out whether the places where students are attached during the COVID-19 period are different and this question was designed as open-ended. The second question, “*On a scale of 1 to 5, would you rate whether the pandemic has changed your attachment to these places*?”, was aimed to learn how much the student's attachment to these places has changed during the pandemic. This question aimed at students to rate the change in their attachment to these places from 1 to 5 (in ascending order) using a Likert scale. However, it was asked as 1: very few changed, 2: few changed, 3: no difference, 4: changed, 5: changed a lot. The questions between the third and ninth questions of the section were the same as the questions from the second to eighth in the first section and they were expected to be answered according to the pandemic period. It was tried to observe the effect of the pandemic period on the answers by asking the same questions that only the period was variable. Finally, the tenth question of this section, “*During the pandemic*

process, where did you attach differently, apart from the places you were attached to before?" was asked to find out which different places the students were attached to during the pandemic.

Participants were directly asked whether they felt attached to the places they mentioned. However, as can be seen in the literature, attachment is a concept that a person develops by being influenced by many external factors, whether he/she is aware or not. For this reason, it was taken into consideration that the participants' attachments and their change during COVID-19 were investigated by questioning the parameters which affect the attachment taken from the literature in the survey.

5.2.5 Data Collection

It was attempted to schedule the survey days as two weekdays and Saturdays on the weekends. Since the survey had to be applied during the final exam period, many students were on campus on Saturday. The period was mostly between "12:00-13:30" when students were taking a break for lunch. All the information was gathered in two weeks, and it took an average of 20 minutes per student to complete the survey.

In this process, I visited the campus before and observed the places where the student population is high. Since it was exam period, I identified the crowded places: the front yards of the Mathematics Building, the front yards of the Physics buildings, Çatı café, the front yard of the Library Building and Çarşı, and the tennis courts. While visiting these places, I randomly searched for participants. I surveyed 60 students, considering the order of gender of the respondents, one female, and one male student. I informed each participant that the survey consisted of three parts and would take approximately 20 minutes. In the first part, I mentioned that the participants will answer their socio-demographic characteristics and their familiarity with the campus. In the second part, I stated that they will answer their attachment and experience regarding open public spaces on campus after the COVID-19 period

(i.e. today), and in the third part, they will answer their attachment and experience regarding open public spaces on campus during the COVID-19 period (within quarantine-restrictions).

5.2.6 Data Analysis

As stated earlier, this study used a mixed methodology, which consists of both qualitative and quantitative research approaches. For the qualitative research approach, the content analysis technique was used to analyze the open-ended questions. According to the literature, content analysis is the systematic, objective, quantitative examination of message characteristics (Neuendorf, 2002, p:1). Leedy and Ormrod (2001), defined the content analysis method as "a detailed and systematic examination of the contents of a particular body of materials to identify patterns, themes, or biases". It is a method used in the studies of human behavior in social sciences. According to Krippendorf (2013), content analysis views data as representations of text, images, and expressions created to be seen, read, interpreted, and acted on for their meanings, and must thus be analyzed with such issues in mind. In this regard, It was decided to use content analysis to organize the information gathered under specific content titles. According to Neuendorf (2002), content analysis summarizes rather than reports all details about a message set. As a result, categorizing student responses under content titles help us in revealing the commonality of variables. Classifying the data and calculating the frequency of mention gives the list of variables expressed by respondents according to their place attachment in public spaces of METU campus. Answers to open-ended questions in the data obtained from the survey were evaluated by determining the frequency and percentage of mentioning and converting them into numerical data.

The answers to the closed-ended questions with multiple choices were analyzed using descriptive statistics. Descriptive analysis is a basic research method that examines the situation as it exists. It involves identifying the characteristics of a particular phenomenon or investigating the relationship between two or more

phenomena on an observational basis (Williams, 2007). In closed-ended multiple-choice questions, the frequency and percentage of options were calculated using frequency tables. The averages and percentages of these answers were presented in the results section of the thesis.

CHAPTER 6

RESULTS AND DISCUSSION

The content analysis results and descriptive analysis applied to the survey answers will be presented and discussed in this part of the thesis.

6.1 Results

As previously stated in the methodology section, the survey was conducted with 60 participants in five different areas on the Middle East Technical University campus. In the first part of the survey questions, there is the demographic section that includes age and gender questions. Also, the familiarity of respondents with the METU campus was questioned in the first part.

The age distribution of the respondents is given in the figure below. According to the figure, most of the participants (11 participants) are 22-year-old students with a share of 18%. From the age distribution, it is seen that participation between the ages of 21-24 is high. It shows that most of the respondents are undergraduate students.

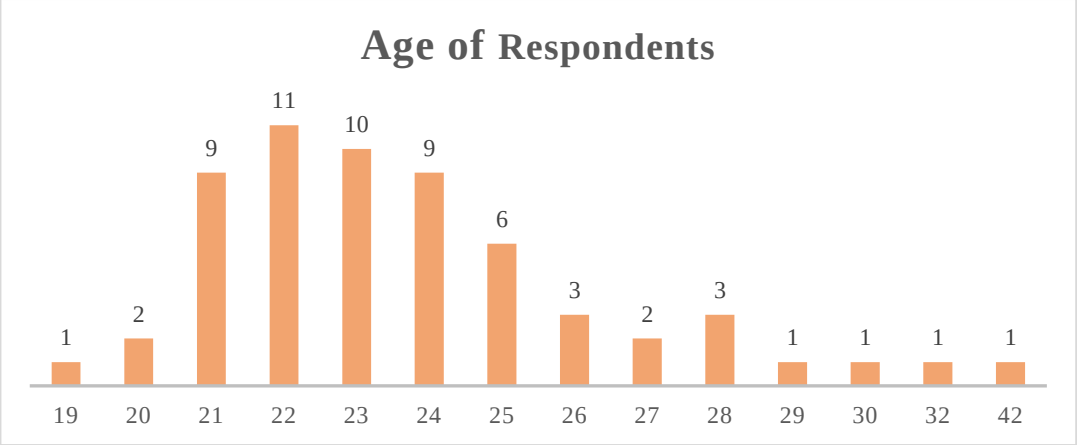

Figure 6.1. Age distribution of the respondents (Source: Author)

Table 6.1 Age group of respondents (Source: Author).

AGE GROUP OF RESPONDENTS			
19-20	**21-24**	**25-30**	**31+**
5%	65%	27%	3%

Regarding gender, the equal distribution of male and female participants was taken into consideration while applying the survey. The survey was conducted with 30 female and 30 male participants.

To assess the level of familiarity, the familiarity of the participants with the METU campus was questioned. Respondents were asked how many years they had been on campus or lived on campus. While the most frequent answer to this question was 5+ with 33.3% (20 students), no students stated that they had been on campus for 2 years.

Table 6.2 Familiarity of respondents with METU campus (Source: Author).

FAMILIARITY	**Frequency of mention**	**%**
1 year	3	5%
2 years	0	0%
3 years	14	23.3%
4 years	10	16.7%
5 years	13	21.7%
5 and more years	20	33.3%
TOTAL	60	100%

The questions in both the second and third parts include both multiple-choice and open-ended questions. The questions in the second part were asked to be answered in the conditions of the post-COVID-19 period. In the third part of the survey, respondents were asked to answer the questions considering the conditions of the COVID-19 period. The questions in this part are the same as in the third part, except for two questions. These two different questions include the question of whether the pandemic has changed their attachment to these places, and to which places they are

attached differently. Keeping questions the same made it possible to observe the effect of the COVID-19 period on the answers.

In the first question in this part, the participants were asked to write down the first three open public spaces they felt attached to at METU. The frequency of mentioning these places was calculated while analyzing this question. The places were categorized according to the common answers given. The answers to "the garden of the faculty building, the Architecture building canteen, the front yard of the Mathematics building, the front yard of the Physics building, the Biology building gazebo, the front and back yards of the Engineering faculty buildings" mentioned by the students were evaluated under the category of the faculty buildings' front and back yards. Çatı, Çarşı and tennis courts are evaluated under the title of recreation areas due to the similarity of their recreational functions. The Library building and Cafeteria building's front and back yards are evaluated under the title of common space front/back yards.

According to the answers, the open public space that students feel most attached to at METU has emerged as "Devrim" with a share of 28%. The second most attached place, with a share of 27%, is given under the single heading "faculty buildings front-backyards" as it includes many faculty building gardens on campus. The most preferred faculty building front and back yards were expressed as the front yards of the Physics building, the front yards of the Mathematics building, and the garden of the Architecture building. The third most attached place among open public spaces in METU is given under the title of recreation areas with a share of 20%. Çatı, Çarşı area, and tennis courts are evaluated under this title.

In the first question in the third part, the respondents were asked whether the places they stated to be attached in the previous part were different during the COVID-19 period and if different, where are these places. In addition to this question, the last question of the survey asked, "during the pandemic process, where did you attach differently, apart from the places you were attached to before?" to students. Therefore, answers to these two questions were considered together. 31.7% of the

respondents stated that their attached places were not different, while 3.3% of them were absent from school during the pandemic. According to the answers, “Devrim” and “Faculty buildings front-back yards” were specified as mostly attached places during the COVID-19 period, with a share of 25.8% for both. The second high percentage of this question, with a share of 21.2%, belongs to the “Others” category consisting of places designated by students for themselves individually. The third most attached place among open public spaces in METU is “Recreation areas,” with a share of 13.6%. “Common space front-back yards” and “Dormitory gardens” follow this list with shares of 7.6% and 6.1%, respectively.

The question of places of attachment, which was answered in post-COVID-19 conditions, was compared with the same question answered in the context of the COVID-19 period. According to the frequency of mention percentages in the results, attachment to Devrim, faculty buildings' front-back yards, recreational areas, common spaces’ front-back yards, and dormitory gardens decreased during COVID-19. Participants mostly mentioned that they developed new attachments to places in the other category. The “others” category could not be categorized under the given subheadings and included the expressions parking lot and forest. In Table 6.3, all students feel attached places are indicated with their percentages.

> *“Because of the strict quarantine measures elsewhere, I usually spent time in the Devrim, where I felt safe and attached.”*

Table 6.3 Places with a high attachment of respondents (Source: Author).

MENTIONED PLACES	**POST-COVID-19**		**COVID-19**	
	Frequency of mention	**%**	**Frequency of mention**	**%**
Devrim	50	28,1%	17	25,8%
Faculty buildings' front-back yards	48	27%	17	25,8%
Recreational areas	36	20,2%	9	13,6%
Common space front-back yards	19	10,7%	5	7,6%
Dormitory gardens	13	7,3%	4	6,1%
Others	12	6,7%	14	21,2%
TOTAL	178	100%	66	100%

After this question, the participants were asked how the places they mentioned in the previous question made them feel. In this question, the content-analysis method was applied. Since place attachment points out emotional bonds with a specific place, the feelings of the participants in these places were investigated. The common feelings in the answers given by the students were determined and categorized. Emotions that are similar to each other were gathered and common names were given to similar emotion dimensions. The emotions expressed by each student were listed under these categories. Frequencies were written according to the repetition of mentioning the related emotion dimension. The percentages of general emotion groups in total and the frequency of mentioning them were calculated. Some of the participants' responses included expressions of thought rather than emotions. For this reason, even though the frequency of mentioning these answers is high, they were evaluated under the title of "others" because they did not answer the question, and therefore, they were not calculated within the percentage values.

When the answers to the question were examined separately, it was understood that the places with high attachment aroused four basic emotional groups. The first three of these emotion groups contain positive emotions, and the last one contains negative emotions. These emotion groups consist of the following emotion dimensions, respectively: 1-peace, calmness, relaxation, 2-happiness-freedom-trust, belonging, 3-excitement, fun, sociability, and 4-tiredness, tension, pain, and insecurity. It has been observed that there are also different approaches when students mentioned the emotions they feel in these places. The underlying meanings of the emotions they mentioned were determined and these emotions were categorized under these four main emotion groups.

The participants stated that they felt 93.9% positive and 6.1% negative emotions in these public spaces in METU after the COVID-19 pandemic. In the post-COVID-19 period, the peace, calmness, and relaxation emotion group was mentioned at the highest rate among positive emotion groups with a share of 40.5%. This group's emotional distribution is as follows: peace with 16.8%, calmness with 16%, and 7.6% relaxation. Among them, the group with the second highest percentage of

positive emotions in the ranking is the happiness, freedom, confidence, and belonging emotion group, with a share of 30.5%. In this second group, 13.7% of the students mentioned happiness, while a sense of belonging was followed by 4.6%. The sense of trust and freedom referred to 5.3% and 4.6%, respectively. The feeling of pleasure has 0.7%, and since it evokes happiness, this feeling has been categorized under this title. Excitement, fun, and sociability, which are the last headings in the positive emotion groups, were determined at a rate of 22.9%. In this group, 11.5% sociability, 6.1% fun, and 5.3% excitement were mentioned. The feeling of desire was mentioned with a share of 0.7%. Since we identified the feeling of desire with the feeling of excitement, we categorized it under excitement. In addition, the feeling of joy was mentioned with a share of 0.7%. Joy was evaluated under the title of fun. Tiredness, tension, pain, and insecurity feelings in the negative emotion group are at the rate of 6.1%. Tiredness and tension share the equation with 2.3%, while pain is mentioned with 1.5%. No one said the feeling of insecurity. Exhaustion was mentioned with a share of 0.7% and evaluated under the sense of tiredness, and gloom was mentioned with a share of 0.7% and evaluated under the sense of tension. According to the results, students mostly feel positive emotions in the open public spaces at METU that they feel attached to.

In the same question in the third part, the respondents were asked how the new attached places they mentioned in the first question of this section made them feel. As in the previous section, the same content-analysis method was applied again in the same order in the second part.

The respondents expressed that they felt 85.6% positive and 14.4% negative emotions in these public spaces in METU that they were newly attached to during the COVID-19 pandemic (Table 6.5). According to the answers given by the students during the COVID-19 period; Enthusiasm was mentioned with a share of 1.9% and passion was mentioned with a share of 1%. Since these feelings evoke the feeling of excitement, we considered them as the feeling of excitement. The feeling of joy was mentioned by 2.9%, and since we identified this feeling with fun, we evaluated it under the fun emotion group. The peace, calmness, and relaxation emotion group

was mentioned at the highest rate among positive emotion groups, with a share of 32.9%. Within this group, 14.4% is peace, 11.3% is calmness, and 7.2% is relaxation. Among them, the group with the second highest percentage of positive emotions in the ranking is happiness, freedom, trust, and belonging, with a share of 31.9%. 10.3% of this group is happiness, 9.3% is trust, 8.2% is freedom, and 4.1% is a sense of belonging. The last positive emotion group, excitement-fun-sociability, has a share of 20.6%. In this group, emotion distributions were 11.3% sociability, 5.2% fun, and 4.1% excitement. The negative emotion group tiredness-tension-pain-insecurity has a rate of 14.4%. Tiredness and pain have the same percentage at 1%, while tension and insecurity were mentioned at 6.2%.

In the pandemic conditions, it was determined that the student's feelings about these places included more negative emotion groups compared to the current situation. Positive emotions decreased with a share of 8.3% regarding COVID-19 conditions. While the percentages of the peace, calmness, and relaxation group and excitement, fun, and sociability group decreased, the rates of happiness, freedom, trust, and belonging group and tiredness, tension, pain, and insecurity group increased in total. Unlike the feelings in the second part, the sense of insecurity seems to come to the forefront during the COVID-19 pandemic.

Table 6.4 Content groups of emotion groups felt in places with high attachment (Source: Author).

CONTENT GROUPS		**POST COVID-19**		**COVID-19**	
EMOTION GROUPS	**EMOTIONS**	**Frequency of Mention**	**%**	**Frequency of Mention**	**%**
Peace-Calmness-Relaxation	Peace	22	16,8%	14	14,4%
	Calmness	21	16%	11	11,3%
	Relaxation	10	7,6%	7	7,2%
	TOTAL	**53**	**40,5%**	**32**	**32,9%**
Happiness - Freedom - Trust - Belonging	Happiness	18	13,7%	10	10,3%
	Freedom	6	4,6%	8	8,2%
	Trust	7	5,3%	9	9,3%
	Belonging	9	6,9%	4	4,1%
	TOTAL	**40**	**30,5%**	**31**	**31,9%**

Table 6.4 (cont'd)

Excitement - Fun - Sociability	Excitement	7	5,3%	4	4,1%
	Fun	8	6,1%	5	5,2%
	Sociability	15	11,5%	11	11,3%
	TOTAL	**30**	**22,9%**	**20**	**20,6%**
Tiredness - Tension - Pain - Insecurity	Tiredness	3	2,3%	1	1,0%
	Tension	3	2,3%	6	6,2%
	Pain	2	1,5%	1	1,0%
	Insecurity	0	0%	6	6,2%
	TOTAL	**8**	**6,1%**	**14**	**14,4%**

Table 6.5 The percentage of negative and positive emotions (Source: Author).

	POST COVID-19	**COVID-19**
	%	**%**
Positive Emotions	93,9%	85,6%
Negative Emotions	6,1%	14,4%

The following table is obtained when each place is examined separately regarding the emotions felt there. It is obtained that "Peace" and "Relaxation" are the most frequent answers for Devrim with a share of %25, and percentages of those feelings are increasing during the COVID-19 pandemic. And, 3.8% of the respondents stated that they felt "Tension" in that place during the COVID-19 pandemic. For the faculty buildings' front-back yards, the most repeated feelings are "Peace," "Relaxation," and "Belonging," with a percentage of 12.8, 14.9, and 12.8, respectively. During the COVID-19 pandemic, the number of students who answer "Peace" is decreasing, "Relaxation" is increasing, and "Belonging" is declining for the faculty buildings' front-back yards. 3.8% of the respondents stated that they felt "Insecurity" in that place during the COVID-19 pandemic. For dormitory gardens, answers of "Relaxation," "Belonging," and "Sociability" in the current situation are observed with a share of 16.7%. But, these percentages decreased to 0% during the COVID-19 pandemic, and the feeling of "Tension" decreased from 0% to 16.7%. "Peace" is the most frequent answer for Common space front-back yards with a share of %37.5, and the percentage of this feeling decreased to 0% during the COVID-19 pandemic.

“Belonging” and “Sociability” feelings are increasing 0 to 16.7% during the pandemic, but at the same time, “Tension” is also rising at the same rate. For Çatı, “Sociability” is the most frequent answer, with 30.8% in the current conditions, but it decreases to 0% during a pandemic. While the “Tension” feeling has 0% in the current conditions, it is reducing 50% during a pandemic. For Çarşı, the most frequent answers are “Sociability” and “Fun” in the current conditions, while “Sociability” during a pandemic. The respondents mostly gave the answers “Relaxation,” “Trust,” and “Belonging” for Tennis courts in the current conditions. During a pandemic, “Sociability” is mostly repeated answer for this place.

Table 6.6 The percentages of feelings in each place in the current situation and during the COVID-19 pandemic (Source: Author).

EMOTIONS	Devrim		Faculty buildings' front-back yards		Dormitory gardens		Common space front-back yards		Recreational areas "Çatı"		Recreational areas "Çarşı"		Recreational areas "Tennis courts"	
	Current	COVID-19	Current	COVID-19	Current	COVID-19	Current	COVID-19	Current	COVID-19	Current	COVID-19	Current	COVID-19
Peace	22.5	34.6	12.8	11.5	0.0	16.7	37.5	0.0	0.0	0.0	16.7	0.0	0.0	16.7
Relaxation	22.5	15.4	14.9	23.1	16.7	0.0	12.5	8.3	15.4	0.0	0.0	0.0	33.3	16.7
Calmness	5.0	0.0	8.5	0.0	16.7	16.7	0.0	8.3	7.7	0.0	0.0	0.0	0.0	16.7
Happiness	10.0	11.5	10.6	11.5	16.7	16.7	25.0	8.3	23.1	50.0	0.0	25.0	0.0	0.0
Freedom	5.0	11.5	6.4	7.7	0.0	0.0	12.5	0.0	7.7	0.0	0.0	0.0	0.0	0.0
Trust	2.5	3.8	2.1	15.4	16.7	16.7	0.0	8.3	0.0	0.0	16.7	25.0	33.3	0.0
Belonging	5.0	3.8	12.8	3.8	16.7	0.0	0.0	16.7	7.7	0.0	0.0	0.0	33.3	16.7
Sociability	7.5	7.7	10.6	3.8	16.7	0.0	0.0	16.7	30.8	0.0	33.3	50.0	0.0	33.3
Excitement	10.0	7.7	4.3	3.8	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0
Fun	10.0	0.0	4.3	11.5	0.0	16.7	12.5	8.3	7.7	0.0	33.3	0.0	0.0	0.0
Tiredness	0.0	3.8	4.3	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tension	0.0	3.8	6.4	0.0	0.0	16.7	0.0	16.7	0.0	50.0	0.0	0.0	0.0	0.0
Pain	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Insecurity	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

The participants were asked which interaction activities they preferred to do most in the places they mentioned during the post-COVID-19 period. This question was prepared as a closed-ended question and the participants were given the option to mark more than one sub-category. The frequency of mentioning these categories was calculated and their percentages were calculated by averaging them using descriptive statistics. This question included the following options: drinks/eating food, walking/jogging, exercising/sports activities, having conversation/chatting, meeting with somebody, photography, view to a passer-by, study, lunch break, and others. Among the options, having a conversation and chatting activities were preferred in the first place with 17.3%. This option was followed by eating and drinking activity with a share of 16.4% and meeting with someone with a share of 16.1%. View to a passer-by, lunch break, and study activities are mentioned at very close rates.

In the third part, the respondents were asked which interaction activities they preferred to do most during the COVID-19 period in the places they mentioned. The closed-ended question with multiple choices included the same options as the previous section. In addition, it was analyzed with descriptive analysis as in the previous part. Among the options, having a conversation and chatting activities were preferred most with 21.4%. Eating and drinking activity followed that with a share of 19% and meeting with someone with a share of 15.3%.

While the activities of eating-drinking, walking-jogging, conversation-chatting, using the shuttle, and view to passer-by have increased, the frequency of mentioning the options of exercising-sports, meeting with somebody, photography, studying, and having lunch breaks has decreased. The percentage and distribution of all options in both post-COVID-19 and COVID-19 periods are presented in Table 6.7 below.

Table 6.7 Frequency of mentions of the types of interaction and activities (Source: Author).

Mentioned Attributes	POST-COVID-19		COVID-19	
	Frequency of mention	%	Frequency of mention	%
Having conversations/Chatting	58	17,3%	53	21,4%
Drinks/Eat food	55	16,4%	47	19%
Meeting with somebody	54	16,1%	38	15,3%
View to passer-by	35	10,4%	27	10,9%
Lunch break	34	10,1%	13	5,2%
Study	31	9,3%	17	6,9%
Walking/Jogging	26	7,8%	22	8,9%
Photography	17	5,1%	12	4,8%
Exercising/Sports	14	4,2%	8	3,2%
Public Transport(shuttle)	9	2,7%	9	3,6%
Others	2	0,6%	2	0,8%
TOTAL	335	100%%	248	100%

Participants were asked what physical characteristics affect their feeling attached to these places during the post-COVID-19 period. This question was prepared as a closed-ended question and the participants were given the option to mark more than one sub-category. The frequency of mentioning these categories was calculated and their percentages were calculated by averaging them using descriptive statistics. This question included physical feature options: green spaces, sitting facilities, presence of water elements, statues, and artworks, landscape, building architecture/aesthetic, cleanliness, and facilities for weather protection. Green spaces were the most mentioned physical attribute with a share of 32.4%. The landscape followed it with 19.7% and the sitting facilities with 19.1%. The presence of water elements, statues, and artworks appeared as the least mentioned physical feature with a share of 3.5%.

The same question in the third part investigates the physical characteristics that affect respondents' feeling attached to these places during the COVID-19 pandemic. The closed-ended question with multiple choices included the same physical feature options as the previous section. Also, it was analyzed with descriptive statistics as in the previous section. Green spaces have the first order with a share of 35.1%. It was

followed by the sitting facilities with 19.2%, landscape with 18.5%, and cleanliness with 13.2%. The presence of water elements, statues, and artworks appeared as the least mentioned physical feature with 2.0%. The distribution and percentages of all options in both periods can be seen in the table below.

Table 6.8 Frequency of mentions of the physical attributes (Source: Author).

MENTIONED ATTRIBUTES	POST-COVID-19		COVID-19	
	Frequency of mention	%	Frequency of mention	%
Green spaces	56	32,4%	53	35,1%
Landscape	34	19,7%	28	18,5%
Sitting facilities	33	19,1%	29	19,2%
Building architecture/aesthetic	15	8,7%	11	7,3%
Facilities for weather protection	15	8,7%	7	4,6%
Cleanliness	14	8,1%	20	13,2%
Presence of water elements, statues, and artworks	6	3,5%	3	2,0%
TOTAL	173	100%	151	100%

Participants were asked how they accessed the places they mentioned during the post-COVID-19 period. This question was prepared as a closed-ended question and the participants were given the option to mark more than one sub-category. The frequency of mentioning these categories was calculated and their percentages were calculated by averaging them using descriptive statistics. This question with multiple choices included the following access tool options: public transport, private car, bicycle, and walking. As seen from the results that the participants mostly prefer walking, with a share of 58%. 25% of the participants access these places using public transportation, 14.3% by private vehicle, and 2.3% by bicycle.

Participants were asked how they accessed the places during the COVID-19 pandemic in the third part. The closed-ended question with multiple choices included the same transportation options as the previous part: public transport, private car, bicycle, and walking. Also, it was analyzed with descriptive statistics as in the previous section. It was determined that the participants mostly prefer walking, with

a share of 53.5%. 23.3% of the participants access these places by public transportation (shuttle), 20.9% by private car, and 2.3% by bicycle.

Table 6.9 Frequency of mentions of the access options to the places with high attachment (Source: Author).

MENTIONED ATTRIBUTES	POST-COVID-19		COVID-19	
	Frequency of mention	%	Frequency of mention	%
By walking	51	58%	46	53,5%
Public transport	22	25%	20	23,3%
Private car	13	14,8%	18	20,9%
Bicycle	2	2,3%	2	2,3%
TOTAL	88	%100	86	100%

Participants were asked how often they used these places and how much time they spent there in the second part. 31.7% of the participants stated that they use it every day, 58.3% several times a week, 8.3% several times a month, and 1.7% several times a year. Also, 46.7% of the students stated that they spent 1-3 hours, 45% 3-6 hours, and 8.3% spent 6 hours or more in these places.

In the third part of the survey, participants were asked how often they used these places and how much time they spent in them during the COVID-19 pandemic. 10% of the participants stated that they use it every day, 42.4% several times a week, 28.8% several times a month, and 18.6% several times a year. For the time spent, 52.5% of the students stated that they spent 1-3 hours, 37.0% 3-6 hours, and 10.2% spent 6 hours or more in these places during the COVID-19 pandemic. Both percentages of frequency of use and time spent in these places can be seen in Table 6.10 and Table 6.11.

Table 6.10 Frequency of use of the places with high attachment (Source: Author).

MENTIONED ATTRIBUTES	POST-COVID-19		COVID-19	
	Frequency of mention	%	Frequency of mention	%
Several times a week	35	58.3%	25	42.4%
Everyday	19	31.7%	6	10,0%
Several times a month	5	8.3%	17	28.8%
Several times a year	1	1.7%	11	18.6%
TOTAL	60	100%	59	100%

Table 6.11 Length of engagement with places with high attachment (Source: Author).

MENTIONED ATTRIBUTES	POST-COVID-19		COVID-19	
	Frequency of mention	%	Frequency of mention	%
1-3 hours	28	46.7%	31	52.5%
3-6 hours	27	45%	22	37.3%
6 hours +	5	8.3%	6	10.2%
TOTAL	60	100%	59	100%

When the participants were asked about other (individual, social, cultural, etc.) factors that affect their feeling of being attached to the places they mentioned, 47.9% of the social factors were mentioned. All of the social factors include the sub-titles of friendship and socialization. Of the rest, 35% are personal factors, and 13.7% are cultural factors. 3.4% were stated as other factors. Personal factors included emotional states such as relaxation, calmness, and freedom, and thought expressions such as memory. On the other hand, cultural factors consisted of the sub-headings of cultural activities and events and awareness of being a METU student.

In the third part, the participants were asked about other (personal, social, cultural, etc.) factors that affected their feeling of being attached to the places during the COVID-19 pandemic. Personal factors having a share of 36% include keywords; relaxation, thinking, and resting. According to the answers, social factors affect attachment most with 45%, and include sub-titles of friendship and socialization. The percentage of selecting the cultural factors option is 9%, and “events” and

“awareness of being a METU student” were mostly repeated keywords for this option. In the “other” option, 13.3% of the respondents stated that they felt attached because those places had no risk for COVID-19. According to Table 6.12, students describe attachment factors as social and cultural factors that decreased during the pandemic, while personal and other factors increased.

Table 6.12 The other factors (individual, social, cultural, etc.) affecting place attachment (Source: Author)

MENTIONED ATTRIBUTES	POST-COVID-19		COVID-19	
	Frequency of mention	%	Frequency of mention	%
Social Factors	56	47.9%	40	45,0%
Personal Factors	41	35,0%	32	36,0%
Cultural Factors	16	13.7%	8	9,0%
Others	4	3.4%	9	10,0%
TOTAL	117	100%	89	100%

Respondents were asked to rate on a scale of 1 to 5 whether the COVID-19 pandemic had changed their attachment to these places. 41.7% of the participants stated that the pandemic changed it by marking option 4. 23.3% marked 1 and mentioned that it changed very little. 13.3% of them stated that it changed a lot by choosing option 5. The rate of those who said there was no difference and changed very little was 11.7% (Table 6.13). After this question, they were asked to explain how they changed. As a result of the answers given to this question, 46% of those who said it changed very little (1) stated that it changed in the direction of decrease and 54% in the direction of increase. Those who said it changed little (2) noted that it decreased. While 48% of those who said it changed (4) noted that it declined, 52% stated that it changed as an increase with a very close ratio. Finally, 75% of the participants who indicated that it changed a lot (5), stated that they experienced a change in the direction of decrease, and 25% indicated that they experienced a difference in the direction of increase. As a result, 57% of the participants stated that their attachment to these places decreased, while 38% stated it increased. 5% of the participants stated

that there was no change (Figure 6.2). Some of the statements that participants indicated in the open-ended questions are:

> *"The quarantine restrictions have negatively affected my attachment to those places."*
>
> *"My attachment to these places was affected by the curfews and online classes during quarantine, so it is decreased."*
>
> *"I started to be afraid of being in the same environment with people; I didn't want to be in crowded places."*
>
> *"My attachment to these places has increased. If the weather is nice, I don't even think of spending time indoors."*

Table 6.13 The change of attachment during the COVID-19 pandemic (Source: Author)

CHANGE OF ATTACHMENT	Frequency of mention	%
1 - very little	13	21.7%
2 - little	7	11.7%
3 - no difference	7	11.7%
4 - a bit of change	25	41.7%
5 - much change	8	13.3%
TOTAL	60	100%

Table 6.14 The change of attachment (decrease or increase) during the COVID-19 pandemic (Source: Author)

CHANGE OF ATTACHMENT	1	2	4	5
Decrease	46%	100%	48%	75%
Increase	54%	0%	52%	25%

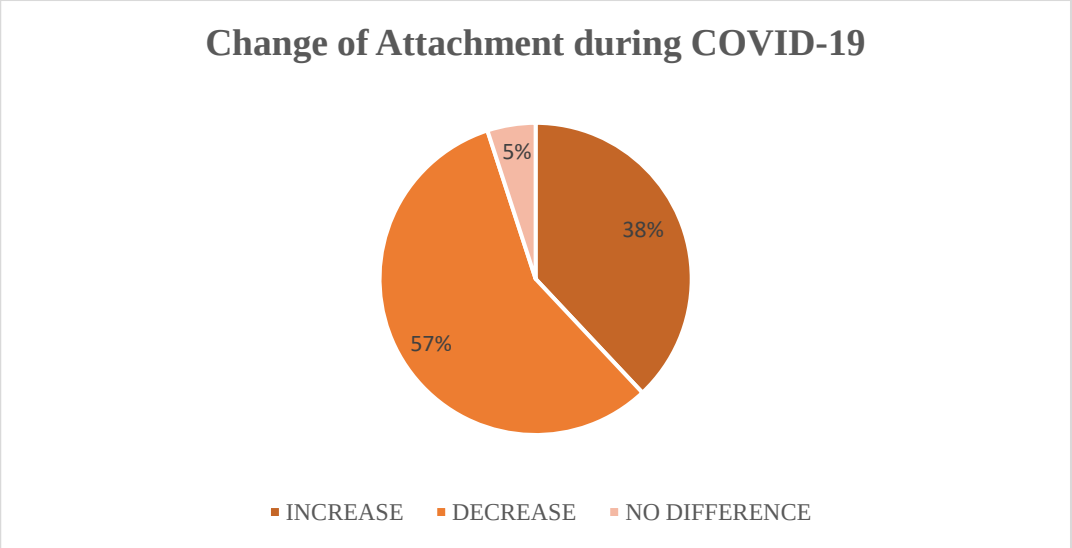

Figure 6.2. Change of Attachment in COVID-19 (Source: Author)

When comparing by gender, 63% of women had decreased attachment, and 33% increased their attachment to those places. 3% stated that there was no difference. The attachment of 50% of men declined, while 43% of them increased. 7% said that there was no difference in their attachment. Accordingly, women experienced more place detachment than men (Table 6.15).

Table 6.15 A Comparison of Changes in the Place Attachment of Women and Men (Source: Author)

	DECREASE		INCREASE		NO DIFFERENCE	
	Frequency of mention	%	Frequency of mention	%	Frequency of mention	%
Women	19	63%	10	33%	1	3%
Men	15	50%	13	43%	2	7%

Table 6.16 shows the change in place attachment according to the age distribution of students. In this study, respondents were selected randomly. Thus, there is no equal number of students for each age group. The age distribution of the students is shown in Figure 6.1. According to that, the participation between the ages of 21-24 is higher with 39 students. From Table 6.15, it can be seen that the number of students who stated a decrease in attachment is more than the number of students who stated an

increase for the ages between 21 and 24. Overall, any correlation between the students' age and place attachments cannot be observed from this data and table.

Table 6.16 Change in place attachment according to the age distribution of respondents (Source: Author)

CHANGE IN ATTACHMENT	AGE GROUP OF RESPONDENTS			
	-20	21-24	25-30	31+
Decrease	2%	35%	18%	2%
Increase	3%	28%	5%	0%
No difference	0%	2%	3%	0%

6.2 Discussion

To examine the change in the attachment of the participants with COVID-19, all responses given both independently of the pandemic and during the pandemic were compared. The parameters and percentages that affect both the decrease and increase in attachment are listed in the context of each question corresponding to certain parameters. According to the answers given by the participants who stated that their attachment decreased, the two parameters that most affected the decrease were the frequency of use and interaction and activities with a rate of 29%. This was followed by the sense of security parameter with a rate of 20%. This parameter refers to the answers given by people who felt unsafe due to COVID-19 in the places they mentioned and found these places risky. The least influencing parameter emerged as physical attributes with a rate of 3%.

On the other hand, when the answers of the people who said that their attachment to the places they mentioned increased during the COVID-19 process is analyzed, it is seen that this increase is mostly affected by the activity and interaction parameter with a share of 38%. Accordingly, students are more attached to these places, where they can perform various activities and especially with the need for socialization. This parameter is followed by the physical attributes parameter with a share of 32%. The green spaces and cleaning/maintenance subheadings are mostly mentioned in

the physical attributes option. The sense of security and length of engagement share third place with a share of 14%. The parameter that least affected the increase in attachment was found to be the accessibility parameter. In Table 6.17 below, all factors affecting both the decrease and the increase can be examined together with their percentages. While the frequency of use is the most effective parameter for decreasing the attachment, it does not affect increasing the attachment.

Table 6.17 Parameters affecting increase/decrease in place attachment (Source: Author)

PARAMETERS	DECREASE IN ATTACHMENT	INCREASE IN ATTACHMENT
Frequency of Use	29%	0%
Interaction-Activities	29%	38%
Sense of Security	20%	14%
Length of Engagement	13%	14%
Accessibility	8%	3%
Physical Attributes	3%	32%

In the literature, six parameters affecting place attachment in the public space have been found. For this reason, in this section, the results of the research will be examined in terms of these six parameters.

6.2.1 Frequency of Use

According to the results, while the option of several times a week and every day is dominant in current conditions, it has experienced a serious decrease in the period of COVID-19, and the options for several times a month and several times a year have increased significantly. This shows that people have reduced the frequency of their use of public space during the pandemic because they were concerned about the spreading of the virus and crowds. Frequency of use is the most effective parameter that causes a decrease in students' attachment to the places they mentioned. When

examined together with all the answers given by the respondents, it is seen that the students' inability to use these places during the pandemic period weakened their ties to these places. On the other hand, according to the answers of the people who stated that their attachment to the places they mentioned increased, the frequency of use parameter was not effective.

6.2.2 Length of Engagement – Level of Familiarity

In the scope of time spent with the places, the options of 1-3 hours and 6 hours and above have increased, while the time interval of 3-6 hours has decreased. This shows that people spent either less time or so much more during the COVID-19 pandemic. The length of engagement parameter is among the less effective parameters, 13%, and 14%, respectively, in both decreasing and increasing engagement.

In the survey, the respondents were asked how many years they had been on campus or lived on campus, and the most frequent answer was 5+ with 33.3% (20 students) (Table 6.1). For the “3 years”,”4 years,” and “5+” options groups, the number of students who states “decrease in place attachment” is more than “increase in place attachment,” according to Table 6.3. The increase is equal to the decrease for the “5 years” option. As in the comment to Table 6.15, any correlation between the number of years on campus and their place attachments cannot be observed from this data and Table 6.18.

Table 6.18 Change in place attachment according to the number of years on campus (Source: Author)

Change in Attachment	**Number of years**					
	1	**2**	**3**	**4**	**5**	**5+**
Decrease	2%	0%	15%	12%	10%	18%
Increase	3%	0%	8%	5%	10%	12%
No difference	0%	0%	0%	0%	2%	3%

6.2.3 Interaction and Activities

Interaction and activities emerged as the parameters that most affected students' attachment to the places they mentioned. According to the answers given, it takes the lead in both the decrease and increase of this attachment. It is seen that the students, whose attachment has increased, use the open public spaces on the campus mostly to interact with people and perform various activities, even during the pandemic period. In addition, from the answers they gave to other questions, it was revealed that they mostly met their socialization needs in this way. On the other hand, when we look at the answers of people with decreased feelings of attachment, it was seen that the diversity of activities decreased and they avoided interacting with people for fear of the spread of the virus.

6.2.4 Accessibility

While the public transportation option has decreased by a small margin, it was seen that the private vehicle option has increased significantly. It has been observed that public transportation has decreased due to the high risk of viruses and crowdedness, and people prefer private vehicles. According to the results, the use of bicycles has remained the same and walking has decreased. Accessibility, with a share of 3%, emerged as the parameter that least affected the decrease in students' attachment to the places they mentioned. In addition, it is one of the two parameters that least affect the increase in their attachment with 8%. Considering the pandemic conditions, it was expected that the use of public transportation would decrease further, and accordingly, students would have transportation difficulties. According to the results, none of the students stated that they could not go to the places they mentioned due to accessibility difficulties.

6.2.5 Sense of Security

Participants were not asked a direct question about their sense of security. On the other hand, it was deduced that students felt safe or unsafe in these places from the feelings they mentioned about the places they felt attached to and from other factors (individual, social, cultural) affecting their attachment during the COVID-19 pandemic. During the COVID-19 pandemic, 88% of the participants evaluated under the "other" factor stated that they found these places risk-free and therefore they were attached. For this reason, it has been deduced that they feel safe in places they see as risk-free. In addition, when the emotional groups of how these places make them feel are examined, it is observed that the sense of trust increased from 5.3% to 9.3% during the COVID-19 period. This shows that students feel safe in open public spaces. On the other hand, while the feeling of "insecurity" was not expressed in any way in the period independent of the pandemic restrictions, it was observed that the sense of "insecurity" arose during COVID-19. This increase was from 0% to 6.2%. The sense of security parameter emerged as one of the three most important parameters that affect both the increase and decrease in students' attachment. However, it is more effective in decreasing the attachment (20%) than in increasing it (14%); this reveals that people feel "insecure" more than they feel "safe" in these places.

6.2.6 Physical Attributes

Regarding physical attributes, the cleanliness option emerged as the prominent physical element that increased the most. It has increased from 8.1% to 13.2% during the COVID-19 pandemic. This shows that students can get rid of the effect of the virus and prefer hygienic places more and establish stronger bonds with these places. In addition, green spaces and sitting facilities are mentioned more frequently, while the presence of water elements, statues, artworks, landscapes, building architecture, and facilities for weather protection is less often cited. When people's caring about

the presence of green space during the COVID-19 pandemic is analyzed together with other answers, It has been observed that green spaces are important for getting fresh air, and there are no quarantine and social isolation measures, causing them to feel "normal." Although physical attributes are the second parameter that most affects people's attachment to the places they mentioned, with a share of 32%, it is the parameter that has the least effect on decreasing this attachment with 3%.

6.3 The Comparison of the Thesis with Literature

There is no study in the literature that measures the place attachment of students during the COVID-19 period and observes the change in this attachment. On the other hand, studies (Düzenli et al., 2018; Hanan, 2013; Talischi & Rezaei, 2019) in the literature that measured the place attachments of university students and identified university campuses as the study area were examined. Therefore, it was considered that it is important to compare the results with these studies in terms of the similarity of the study subject, study area, and target group.

The aim of the study conducted by Talischi and Rezaei (2019) with 150 students at the Faculty of Fine Arts of Tehran University is to observe the relationship between open public spaces on campus and students' attachments to them. According to the results of Talischi and Rezaei's study, the most influential parameter of students' attachments is interaction and activities. The presence of places that allow for collective activities and social bonds for people has emerged as a factor that enables students to develop and strengthen attachments. Similarly, in this thesis, interaction and activities emerged as the parameter that most affected both the decrease and increase in the attachment of students to campus open spaces. When the answers given by the students were examined, it was observed that their socialization needs increased, and they frequently used these places to perform different activities to meet this need. On the other hand, the decrease in the variety of activities for students with attachment decreased. In Talischi and Rezaei's study, the next two factors that increase attachment the most are the presence of artistic and architectural elements

and green areas, which can be evaluated under the parameter of physical attributes. Both of these factors provide students with both visual attraction and meaningful environmental personality. In this study, while green spaces appeared as the most affecting sub-title among physical attributes, the presence of artistic and architectural elements was one of the sub-titles that affected the attachment the least.

In Hanan's (2013) observational and survey-based study on a university campus in Indonesia, the essential characteristics of open public spaces on the ITB campus in Indonesia that make them meaningful for students were investigated. In this study, students stated that they were most attached to common spaces, building verandas, and courtyards. In this study, the front and back yards of the faculty buildings and the front and back yards of the common spaces emerged among the places that felt most attached. In this context, the places that feel attached are similar. In Hanan's study, students participate in activities such as having conversations, waiting for the next lesson, studying, and lunch breaks at places where they feel attached. On the contrary, these activities are one of the least effective activities in this study under the interaction and activities parameter, except for having conversations. Having conversation/chatting, together with eating and drinking and meeting with somebody, constitute the most preferred activities of this study. In both studies, it is the most that the length of engagement in open public spaces on campus was determined as "1-3 hours". Among the physical features that have been observed to increase attachment, green spaces and seating opportunities are the factors with the highest percentage. Likewise, the two most effective physical features in this study were green areas and sitting facilities. For the accessibility parameter, in Hanan's study it is specifically stated that easy access is an important parameter for students to attach to those places, while in this thesis, accessibility is one of the least influential parameters for both a decrease and increase in attachment.

Finally, in a survey-based study conducted by Düzenli et al. (2018) with 86 students, the attachments of students from outside the city to the open public spaces in the KTU campus in Trabzon and how they were affected by this campus design were investigated. The main result of this study is that students feel safe on campus, and

this sense of security positively affects students' attachments. Similarly, in this thesis, students mentioned that they felt safe in the open spaces of this campus in a period independent of the COVID-19 period. So much so that the security parameter is among the first three parameters that affect its attachments. In addition, in both studies, the presence of open public spaces that allow students social interactions with other people and various activities is also the factor that increases attachment the most. Other parameters were not investigated in Düzenli et al.'s study. The Common parameters with similar studies in the literature are listed in Table 6.19.

Table 6.19 Comparison of the Thesis with Literature (Source: Author)

COMMON INFLUENTIAL PARAMETERS	**Thesis**	**LITERATURE**		
		Talischi & Rezaei (2019)	**Hanan (2013)**	**Düzenli et al. (2018)**
Frequency of Use	+		+	
Length of Engagement	+			
Interaction - Activities	+	+	+	+
Accessibility	+			
Sense of Security	+			+
Physical Attributes	+	+	+	

CHAPTER 7

CONCLUSION

This study mainly focused on the place attachment of university students regarding open public spaces and their change in the COVID-19 period. After a comprehensive literature review, parameters affecting place attachment in public spaces were determined. These are frequency of use, length of engagement, level of familiarity, interaction and activities, accessibility, sense of security, and physical attributes. When the studies involving university students, the target group of the study, were examined, interaction and activities, physical attributes, and accessibility parameters emerged as the factors affecting the place attachment the most. Although these three are the most effective parameters among university students, all parameters have been investigated.

The research focused on answering two questions. 1- What are the effective parameters of METU students' place attachment to open public spaces in METU? 2- Has the COVID-19 pandemic changed METU students' attachment to these places?

The study was conducted through a survey of 60 students at the METU Ankara campus. The survey was conducted at five different predetermined locations on the METU campus. These places were determined in direct proportion to the crowding rates based on observation. These sample areas are 1-Front yards of the Mathematics Building, the 2-Front yard of the Physics Building, 3-Çatı Cafe, 4- the Front and back yard of the Library Building, and 5-Çarşı-Tennis Courts. This utterly voluntary survey was divided into three parts. It started with questioning age, gender, and familiarity with METU. The second part was requested to be answered by considering the conditions after the COVID-19 pandemic. In the third part, the same questions were asked again regarding restrictions and quarantines during the COVID-19 pandemic. In addition, it was tried to determine whether COVID-19

changed their attachment to the mentioned places and whether they were attached to new places.

The answers to all questions were first analyzed separately and then tried to be interpreted in connection. In line with all these, students' attachment to open public spaces on the METU campus and whether this has changed during the COVID-19 period have been evaluated.

According to the results of the research, the most attached places during the COVID-19 period were the Devrim stadium and the front and back yards of the faculty buildings. The "others" category emerged as the third-place category that students attached the most. In this category, there are places that students identify with themselves that cannot be grouped under any other sub-headings, such as faculty parking lots, forests, and bicycle lanes. This category has emerged as a subjective result of this study.

During the literature review, the factors affecting place attachment in public spaces were listed as follows: frequency of use, length of engagement and level of familiarity, interaction and activities, accessibility, sense of security, and physical attributes. Within the scope of these headings, the conclusions were interpreted as follows:

- **Frequency of use:** It was observed that the frequency of use of the places that students mentioned in the post-COVID-19 period decreased with the interpretation of the answers given in COVID-19. Although the frequency of use is the most effective parameter in decreasing the students' attachment to the places they mentioned, it does not seem to be effective in increasing these attachments.
- **Length of Engagement - Level of Familiarity:** Although it was observed that the length of engagement has almost the same effect on both the increase (%14) and decrease (%13) of the attachment of the participants to the places they mentioned, no direct relationship could be determined between the “1-3 hours”, “3-6 hours”, and “6 hours and longer” options and the changes in

their attachments. The level of familiarity was asked at the beginning of the survey; It does not appear as a changing factor in COVID-19. It was desired to observe only the students' familiarity with the places where they felt attached.

- **Interaction and Activities:** In the open-ended questions, the students stated that the open spaces on the campus provide a lot of opportunities for interaction and various activities, and they mentioned that they prefer open spaces more during the pandemic period, and this is a parameter that increases their attachments. Despite this, the first three activities that came to the fore in the COVID-19 and post-COVID-19 periods have not changed in terms of their type and order, and are respectively: having conversation/chatting, drinks/eating food, and meeting with somebody. While it was observed in the literature that interaction and activities are the parameters that most affect students' attachment, in this study, it has also emerged as the parameter that is most effective in decreasing and increasing attachment.
- **Accessibility:** It is seen that students' access to the places they mentioned decreases in the context of public transportation and increases in the context of private vehicles. This shows that students wanted to escape from crowded and unhygienic environments in public transport with the risk of illness. However, none of the students answered that they could not come to these places because they did not have access. While accessibility is the least effective parameter with 3% in the decrease of students' attachment to those places, it is also one of the two least effective parameters with a share of 8% in its increase.
- **Sense of Security:** Students were not explicitly asked whether they felt safe in places they felt attached to. On the other hand, this parameter was examined by inferring from other factors affecting their attachment (individual, social, cultural, other) and their feelings in these places. Students mentioned the term risk-free while describing other factors that affect their

attachment during the COVID-19 period. In addition, it was observed that the feeling of trust increased in the expression of feelings about these places. Considering these, it can be said that students feel safe in open public spaces. However, while the feeling of insecurity was not expressed in the post-COVID-19 period, it was observed that this feeling emerged during the COVID-19 period. The sense of security parameter emerges as one of the three most important parameters that affect both the increase and decrease in students' attachment. In the meantime, it is seen that the decrease in students' attachment to these places is more effective than its increase. For this reason, it is accepted that students feel more insecure than feeling safe in these places.

- **Physical Attributes:** When examining the physical features that affect students' attachment to the places they mentioned, it was observed that green spaces and cleanliness options increased the most during the COVID-19 period. When analyzed with the answers to other questions, this answer shows that students prefer green spaces to get away from quarantine conditions, get fresh air, and relax. Cleanliness, which increased from 8.1% to 13.2%, is the physical feature that has increased the most in COVID-19. This indicates that students attach to more hygienic and clean places to avoid the spread of the virus and to minimize the risk of getting sick. Apart from these two physical features, no significant relationship was observed between the other physical features and the change in attachment during the COVID-19 period. While physical attributes appear as the most effective parameter in increasing students' attachment to the places they mentioned, it is the least effective parameter in decreasing attachment.

As a result, this study deduced that %57 of the respondents of METU students' attachment to public spaces on the METU campus decreased during the COVID-19 period. It was determined that 38% of the participants increased their attachment. It was detected that 5% of the participants did not change their attachment.

Place attachment studies in public spaces are limited in the literature. In particular, it was observed that these studies are not frequently applied to specific age groups while the literature is being reviewed. In this context, this thesis focuses only on university students and investigates the place attachment perception of these age groups in open public spaces. Parameters affecting the attachment have been listed by different sources in the literature. Another critical aspect of the study is that it shows the effective parameters in the changes that occur by comparing the attachments of the students during the COVID-19 period and the attachments in the post-COVID-19 period. The impact of the COVID-19 pandemic which has affected the whole world for a long time, to place attachment, has not yet been discussed in depth, and this study can be considered a starting point for this. It is foreseen that the study will constitute a resource for different disciplines such as architecture, city planning, and environmental psychology.

In an architectural context, through the results of this study, the design of university campuses can be improved within the parameters observed to affect student attachment. The quality and usage of open public spaces can be enhanced by observing places with high attachment and their characteristics. In addition, if an exemplary situation such as COVID-19, which will affect and change our lives, is encountered, open public spaces that people can use can be reconsidered according to the results of this study. In particular, it has been observed that students frequently use open public spaces that allow various activities and interactions that meet their socialization needs. In addition, it has been revealed that physical features such as green areas, sitting facilities, and cleanliness make these places more attractive for students and positively affect their attachment. In addition, it is seen that the sense of security significantly affects the use of these places during the pandemic period. With all these criteria, students spent more time in these places and used these places more often. For this reason, it is foreseen that these inferences may be useful if there is an epidemic or a situation that will completely affect our whole life.

According to the results of this thesis, it is seen that while the affective and individual characteristics of the place come to the fore in the post-COVID-19 period, the social

significance of the place is emphasized in the COVID-19 period. Considering the previous studies, it has been predicted that the pandemic will change and reduce students' attachment to these places. However, it was observed that the attachment of the participants did not change as expected due to the significant attributes of open public spaces in METU. It has been revealed that since there are not many qualified, accessible, open public spaces that allow for many activities in the city, the participants frequently prefer open public spaces on the METU campus even during the COVID-19 period. Even if the frequency of use of the places students attached decreased, the increase in the time they spend in these places also demonstrated the importance of these places on the METU campus.

The study was conducted with 60 people on the METU campus. For this reason, no sharp changes were observed in the results. On the other hand, if this study had been conducted with a larger group of participants, it is expected that there would be larger variations in the results. For example, in this study, no significant changes were observed in the types of activities that students participated in or in the physical characteristics that affected their attachment. However, it is estimated that these categories would change more dramatically if a study on this subject was implemented by targeting a wider group of participants. In addition, while the use of public transport is expected to decrease much more, it was not observed that it changed significantly. In this way, it is predicted that it will be possible to reach more reliable data by asking more quantitative questions and using a different statistical method in a study that focuses on a larger group of participants.

One issue with the study was that the participants included only volunteers, so a certain number or specific demographic characteristics could not be selected. For this reason, the relationship between these demographic characteristics and attachment behaviors could not be tested. Therefore, for future studies, it is recommended to study this topic by applying it to a group with an equal distribution of all socio-demographic characteristics and targeting a larger number of participants, which enables us to make more accurate assessments. It will also be useful for the other researchers to use another method for the collection and analysis

of data. Thus, a comparison of those methods can be done. For further studies, a survey on this subject can be applied to a larger group of participants and analyzed with advanced statistical methods. Apart from these frequency tables and analyses, the relations of the parameters with each other can be examined.

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APPENDICES

A. Ethics Committee Approval

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
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04 AĞUSTOS 2022

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Ela Alanyalı ARAL

Danışmanlığını yürüttüğünüz Deniz YILMAZ'ın "Coronavirüs-19 Pandemisinin ODTÜ Öğrencilerinin Yere Bağlanmalarına Etkisi - Yüksek Lisans Tez Araştırması" başlıklı araştırmanız İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek gerekli onay **0408-ODTUİAEK-2022** protokol numarası ile onaylanmıştır.

Bilgilerinize saygılarımla sunarım.

Prof. Dr. Mine MISIRLISOY
Başkan

Doç. Dr. İ.Semih AKÇOMAK
Üye

Dr. Öğretim Üyesi Müge GÜNDÜZ
Üye

Dr. Öğretim Üyesi Serife SEVİNÇ
Üye

Dr. Öğretim Üyesi Murat Perit ÇAKIR
Üye

Dr. Öğretim Üyesi Süreyya ÖZCAN KABASAKAL
Üye

Dr. Öğretim Üyesi A. Emre TURGUT
Üye

B. Survey Questions

Değerli Katılımcı,

Bu çalışma Orta Doğu Teknik Üniversitesi Fen Bilimleri Enstitüsü Mimarlık Yüksek Lisans programında yürütülen "Coronavirüs-19 Pandemi Sürecinin Üniversite Öğrencilerinin Kamusal Alanlara İlişkin Yer Bağlılığına Etkileri: Orta Doğu Teknik Üniversitesi Örneği" başlıklı yüksek lisans tezine veri sağlamak amacıyla düzenlenmiştir. Çalışmada sizden kimlik veya kurum belirleyici hiçbir bilgi istenmemektedir. Anketteki sorulara vereceğiniz cevaplar yalnızca bu çalışmada kullanılacak, araştırmacılar tarafından değerlendirilecek ve başka hiçbir kurum veya kişiyle paylaşılmayacaktır. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayımlarda kullanılacaktır. Bu anket çalışmasında, dilediğiniz yerde çalışmadan çıkabilir, istemediğiniz soruya cevap vermeyebilirsiniz. Ankete katılım gönüllülük esasına dayanmaktadır. Katkılarınız için şimdiden çok teşekkür ederim.

Anket Soruları:

1. Bölüm:

1) Kaç yaşındasınız?
   _____
2) Cinsiyetiniz nedir?
   ☐ Kadın ☐ Erkek ☐ Belirtmek istemiyorum
3) Kaç yıldır kampüse geliyorsunuz veya kampüste yaşıyorsunuz?
   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 5+

2. Bölüm: COVID-19 Pandemisi sonraki dönem: (Aşağıdaki soruları lütfen güncel, mevcut koşulları göz önünde bulundurarak cevaplayınız.)

1) ODTÜ kampüsünün açık kamusal alanlarını düşündüğünüzde kendinizi en bağlı hissettiğiniz ilk üç yer neresidir?
   1:_____2:_____3:_____
2) Bu yerler size neler hissettiriyor?
   1:_____2:_____3:_____
3) Bu yerlerde hangi sosyal etkileşim-aktivitelere katılıyorsunuz? (Birden çok işaretleme yapabilirsiniz.)
   ☐ Yeme-içme ☐ Yürüyüş/koşu ☐ Egzersiz-spor ☐ Konuşma-sohbet ☐ Toplu taşıma (Ring kullanımı) ☐ Buluşma ☐ Fotoğraf çekme ☐ Etraftakileri izleme ☐ Çalışma ☐ Öğle arası
   ☐ Diğer _____
4) Bu yerlere bağlı hissetmenizde etkili olan fiziksel özellikler nelerdir? (Birden çok işaretleme yapabilirsiniz.)
   ☐ Yeşil alanlar ☐ Oturma elemanları ☐ Su öğesi/ heykel/ sanat eserleri ☐ Manzara ☐ Mimari özellikler/estetik ☐ Temizlik/bakım ☐ Hava koşullarına karşı koruma olanakları
5) Bu yerlere erişimi nasıl sağlıyorsunuz?
   ☐ Toplu taşıma ☐ Özel araç ☐ Bisiklet ☐ Yürüyerek
6) Bu yerlere hangi sıklıkta gidiyorsunuz?
   ☐ Her gün ☐ Haftada birkaç kere ☐ Ayda birkaç kere ☐ Yılda birkaç kere
7) Bu yerlere gittiğinizde ne kadar vakit geçiriyorsunuz?
   ☐ 1-3 saat ☐ 3-6 saat ☐ 6 saat ve üstü

8) Bu yerlere bağlı hissetmenizi etkileyen diğer özellikler (bireysel, sosyal, kültürel, vb) nelerdir? (Birden çok işaretleme yapabilirsiniz. Lütfen seçtiğiniz her üst başlık için örnek veriniz.)
☐Bireysel:
_____
☐Sosyal:
_____
☐Kültürel:
_____
☐Diğer:
_____

3. Bölüm: Aşağıdaki soruları lütfen COVID-19 pandemisi döneminin (kısıtlama ve karantinaların uygulandığı dönem) koşullarını göz önünde bulundurarak cevaplayınız.

1) ODTÜ kampüsünün açık kamusal alanlarını düşündüğünüzde kendinizi en bağlı hissettiğiniz ilk üç yer pandemi döneminde farklı mıydı? Hangi yeni yerler bağlarınızın daha kuvvetli olduğu yerler oldu?
_____

2) Pandeminin bu yerlere olan bağlılığınızı değiştirip değiştirmediğini 1'den 5'e kadar değerlendirir misiniz? (1: çok az; 2: az; 3: fark yok; 4: değiştirdi; 5: çok değiştirdi) Nasıl değiştirdiğini açıklar mısınız?
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
_____

3) Bu yerler size neler hissettirdi?
1:_____2:_____3:_____

4) Bu yerlerde hangi sosyal etkileşim-aktivitelere katılıyordunuz? (Birden çok işaretleme yapabilirsiniz.)
☐ Yeme-içme ☐ Yürüyüş/koşu ☐ Egzersiz-spor ☐ Konuşma-sohbet ☐ Toplu taşıma (Ring kullanımı) ☐ Buluşma ☐ Fotoğraf çekme ☐ Etraftakileri izleme ☐ Çalışma ☐ Öğle arası

☐ Diğer _____

5) Bu yerlere bağlı hissetmenizde etkili olan fiziksel özellikler nelerdi? (Birden çok işaretleme yapabilirsiniz.)
☐ Yeşil alanlar ☐ Oturma elemanları ☐ Su ögesi/ heykel/ sanat eserleri ☐ Manzara ☐ Mimari özellikler/estetik ☐ Temizlik/bakım ☐ Hava koşullarına karşı koruma olanakları

6) Bu yerlere erişimi nasıl sağlıyordunuz?
☐ Toplu taşıma ☐ Özel araç ☐ Bisiklet ☐ Yürüyerek

7) Bu yerlere hangi sıklıkta gidiyordunuz?
☐ Her gün ☐ Haftada birkaç kere ☐ Ayda birkaç kere ☐ Yılda birkaç kere

8) Bu yerlere gittiğinizde ne kadar vakit geçiriyordunuz?
☐ 1-3 saat ☐ 3-6 saat ☐ 6 saat ve üstü

9) Bu yerlere bağlı hissetmenizi etkileyen diğer özellikler (bireysel, sosyal, kültürel, vb) nelerdir? (Birden çok işaretleme yapabilirsiniz. Lütfen seçtiğiniz her üst başlık için örnek veriniz.)

a. ☐Bireysel:
_____

b. ☐Sosyal:
_____

c. ☐Kültürel:
_____

d. ☐Diğer:
_____

10) Pandemi sürecinde, öncesinde bağlı olduğunuz yerler dışında bağlandığınız farklı nereler oldu?
_____