

THE IMPACT OF CONTROLLED ACCESS TO DESIGN STUDIOS ON  
PLACE ATTACHMENT AND TERRITORIALITY

A Master's Thesis

by

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Ankara  
July 2018



To my wonderful family

THE IMPACT OF CONTROLLED ACCESS TO DESIGN STUDIOS ON  
PLACE ATTACHMENT AND TERRITORIALITY

The Graduate School of Economics and Social Sciences  
of  
İhsan Doğramacı Bilkent University

by

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THE DEPARTMENT OF  
INTERIOR ARCHITECTURE AND ENVIRONMENTAL DESIGN  
İHSAN DOĞRAMACI BILKENT UNIVERSITY

ANKARA

July 2018

I certify that I have read this thesis and have found that is fully adequate, in scope and in quality, as a thesis for the degree of Master of Fine Arts in Interior Architecture and Environmental Design.

  
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## **ABSTRACT**

### **THE IMPACT OF CONTROLLED ACCESS TO DESIGN STUDIOS ON PLACE ATTACHMENT AND TERRITORIALITY**

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The present study focused on to explore the relationship between place attachment and territoriality of students towards their design studios. For this purpose, we examined place attachment and territoriality in design studios by comparing design studios with open doors, which belongs to Interior Architecture and Environmental Design (IAED) Department; and key-card entry, which belong to Architecture (ARCH) department. Additionally, students' evaluation of their own design studios was also considered in the study. The questionnaire of the study included items of place attachment, which were adapted from Workplace Attachment Scale of Rioux (2006); territoriality, adapted from Brown (2009) and general evaluation items towards interiors, adapted from Imamoglu (1981). This questionnaire was administered to 2<sup>nd</sup> and 3<sup>rd</sup> year students from two departments at I.D. Bilkent University. One hundred and fifty students (110 women, 40 men) responded to the questionnaire in their own design studios. The results indicate that

place attachment had positive relationships with both territoriality and general evaluation of the studios. It is also found that there is a positive relationship between place attachment and general evaluation. However, no certain relationship emerged between territoriality and general evaluation.

Keywords: Design studios, Environmental features, General evaluation, Place attachment, Territoriality

## ÖZET

### TASARIM STÜDYOLARINDA KONTROLLÜ GİRİŞİN MEKANSAL BAĞLILIK VE BÖLGESELLİK ÜZERİNDEKİ ETKİSİ

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Bu çalışmada tasarım stüdyolarında öğrencilerin mekânsal bağlılık ve bölgesellik arasındaki ilişkiyi incelemek amaçlanmıştır. Bu amaçla, mekânsal bağlılık ve bölgesellik İç Mimarlık ve Çevre Tasarımı Bölümü'ne (IAED) ait olan ortak kullanıma açık stüdyolar ve Mimarlık Bölümü'ne (ARCH) ait olan kart girişli stüdyolar karşılaştırılarak yapılmıştır. Ek olarak öğrencilerin kendi stüdyolarını iç mekânsal değerlendirmesi de çalışılmıştır. Anket çalışmasında sorulan sorular, Rioux (2006) tarafından ortaya konmuş Çalışma Alanlarında Mekânsal Bağlılık ölçütünden adapte edilmiş mekânsal bağlılık maddeleri, Brown (2009) tarafından ortaya konmuş bölgesellik maddeler ve İmamoğlu (1981) tarafından ortaya konmuş "İç uzamlar için genel bir değerlendirme ölçütü"nden alınan genel değerlendirme maddelerinden oluşmaktadır. İki bölümün 2. ve 3. sınıf öğrencileri arasında bir anket çalışması yürütülmüş ve cevaplar incelenmiştir. Yüz elli kişi (110 kadın, 40 erkek) çalışmaya katılmıştır. Sonuçlar tasarım stüdyolarında mekânsal bağlılığın, bölgesellik ve

evrenin genel deęerlendirilmesi ile arasında pozitif bir iliŐki olduęunu gstermiŐtir. Ancak, blgesellik ve genel deęerlendirme arasında bir iliŐki bulunmamıŐtır.

Anahtar Kelimeler: Blgesellik, evresel zellikler, Genel deęerlendirme, Mekânsal baęlılık, Tasarım stüdyosu

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# CHAPTER 1

## INTRODUCTION

Learning is an essential part of everyone's life. There are fundamental factors that affect the quality of education, such as characteristics of learners and methods of instructors. Along with these factors, learning environment contributes to the quality of education as well. Many researches were conducted about the physical qualities of learning environment, beside the ones about the psychological aspects of a learning environment (Gifford, 2014b; Lewicka, 2011).

University is a place where the transition from home to society happens. This is an important phase in one's life experience since they discover new things and discover themselves during university years (Quingjiu & Maliki, 2013). For the case of design education, design studios are the core locus, where most of the learning occurs for design students and where they spend most of their time during their education. Different from other disciplines, learning in design education is not based on a one-way communication. Students

learn from each other as well as they learn from their instructors, which makes design studios unique places (Demirbaş & Demirkan, 2003). Thus, providing an environment in design studios with good quality of architectural and psychological environment would support the communication between users.

In this study, it is aimed to explore design studios from a psychological perspective. There are two concepts in this study which are thought to support and expected to create a better learning atmosphere in design studios: place attachment and territoriality.

### **1.1. Aim of the Study**

Place attachment has been subject to many disciplines and investigated in many fields, from globalization and immigration studies to mobility and urban development studies (Hernandez, Hidalgo & Ruiz, 2014). Previous studies revealed that there are various contributions of place attachment and territoriality that would positively affect the quality of education in learning environments. These contributions may occur both directly and indirectly.

Place attachment is known to affect users' psychology and behavior within a space, which is proved by researches in their studies (Lewicka, 2011). Place attachment is found to boost the will for achieving goals for university students (Kyle, Mowen & Tarrant, 2004). Also, it improves university

students' confidence, freedom of behavior and motivation for exploration (Rollero & Piccoli, 2010). In addition to several other studies on place attachment in learning environments, it is found to support academic self-efficacy, relationship with peers and conservative behavior towards their place of attachment and prevent students from dropping out of school (Chow & Healey, 2008; Moghisi, Mokhtari & Heidari, 2015; Vinsel, Brown, Altman & Foss, 1980; Xu, Bakker & Strijker, 2015).

The other concept, territoriality, has also been found to support quality of learning environment. Despite the general misunderstanding of association territoriality with aggressive and violent behavior, it actually plays an important role in building healthy communication within learning and working areas. Territoriality regulates the social relationships and communication within a place (Brown, Lawrence & Robinson, 2005). Also, it enables people to personalize their spaces which improves the social and creative atmosphere in working areas (Holahan, 1976). Additionally, enabling users to personalize their spaces is highly recommended by Gifford (2014b) to support social design. This design method is centered on users' needs and satisfaction and it is suggested to improve self-confidence of users by making them in control.

Considering these mentioned findings and many other studies unmentioned which revealed the psychological and social contributions of place attachment and territoriality, in the present thesis, the relation between place

attachment and territoriality is explored in learning environments, to be more specific design studios in universities.

As mentioned above place attachment and territoriality are studied in previous works, however they were investigated in separate studies. To find the relationship between place attachment and territoriality in design studios, levels of place attachment and territoriality of students towards their design studios are measured, compared and correlated along with several other items, including general evaluation of the physical environment.

In literature, there was no study which consider and investigate them together and relate them to each other. Thus, this study aims to explore the relationship between place attachment and territoriality and enlighten this gap in literature by doing so. To achieve this, a self-report questionnaire was prepared and delivered to students who volunteered to participate in this study. The questionnaire was designed to measure the levels of place attachment and territoriality in design studios together. It is thought to be healthier to enable students to evaluate themselves on their own and anonymously. Also, they filled the questionnaires in their own design studios. In this way, it is aimed to make the respondents feel more comfortable and honest with their responses and gather more reliable information.

## **1.2. Structure of the Thesis**

The present thesis is consisted of six chapters. The first chapter is introduction. In this chapter, aim of the study is presented along with the statement of the problem and findings from previous works which illustrates the importance of place attachment and territoriality in learning environments and design studios. The structure of the present thesis is also stated in this chapter.

The second chapter is place attachment. There are some of the previous studies from literature and relevance to the topic are presented and explained. The definitions and contributions of place attachment for education and psychology are presented in this chapter. The framework that this study is based on is also included in literature review.

The third chapter is territoriality. In this chapter, some of the previous studies are covered. The definition, framework used in the present thesis and its relevance to this study are explained.

The fourth chapter is general evaluation of environmental features. In this chapter, what it meant for this study and its contributions to educational environments are explained.

In the fifth chapter, methodology of the study is presented. Firstly, the research questions and the hypotheses are stated in this chapter. Then the

demographic and statistical information about the sample is provided. In this chapter, instrument created and used in this study is explained. Lastly, the setting of where the study was conducted, and procedure of the study are also explained in this chapter.

The sixth chapter is results. The findings of the study are presented in this chapter. The descriptive statistics and correlations of the items studied were presented. These items' means are compared between students of two departments by using T-Test. Also, factor analyses and reliability tests were conducted on place attachment, territoriality and general evaluation on physical environment items. Then, they are explained and presented in this chapter.

The seventh chapter is discussion. The results of the statistical tests of the present study are analyzed and evaluated in this chapter. The findings of this study were compared with the findings of previous studies and their meanings for the literature were discussed.

The eighth chapter is conclusion. In this chapter, conclusions about the results are briefly presented. Also, the limitations of the study and suggestions for the future studies are stated in this chapter.

## **CHAPTER 2**

### **PLACE ATTACHMENT**

In this chapter, previous studies are covered to understand the terms, place attachment and workplace attachment of university students in design studios are presented. In this chapter, place attachment is defined, then its benefits in psychological and educational aspects which are discovered in previous studies are covered. Then the framework on place attachment that is acquired for the present thesis, workplace attachment and its measure are presented.

#### **2.1. Definition**

There are plenty of definitions, and of course approaches, accumulated in different disciplines, including environmental psychology among others from gerontology to forestry for place attachment (Lewicka, 2011). Even within the

discipline of environmental psychology, the definitions may vary according to the model. In this thesis, place attachment is defined as “a bond between an individual or group and a place that can vary in terms of spatial level, degree of specificity, and social or physical features of the place, and is manifested through affective, cognitive, and behavioral psychological processes” (Scannell & Gifford, 2010, p.4). These bonds between people and places are important since they contribute to people’s quality of lives in general, especially to their psychological well-being and regulation of social relationships (Hernandez, Hidalgo & Ruiz, 2014). In the present thesis, contributions of place attachment to psychology of people and education are prioritized and presented.

## **2.2. Psychological Contributions**

There are several psychological benefits of place attachment to people’s well-being which are stated in previous studies from several disciplines such as anthropology, psychology and sociology. Some of these benefits are creating symbolic connections between individuals and their ancestors and culture (Billig, 2006), increasing and strengthening social link between the community members and the feel of being a part of community (Hidalgo & Hernandez, 2001). Sense of community is important in design studios, since the education here is not only based on what the instructors provide but also their peers are part of their education. Place attachment provides emotional

and cognitive restoration and get away from stressors of daily life (Kaplan, 1995). Because design studios are where design students spend most of their time, it is important for their mental health to get rid of the stressors and feel more relaxed in their studios.

To learn the experienced benefits of place attachment, Scannell and Gifford (2017) conducted a study in which they asked the participants to list places which they feel attached and describe what kind of a places they are (home, public space, city, region, etc.) and lastly, they were asked to state outcome of their attached places. Participants were also asked to complete several questions about the places they listed. These questions were “Why do you feel attached to this place? Please give one or two reasons.” and “What psychological and other benefits do you experience from being connected to this place? please provide two or three benefits.”

The findings of this study showed that people feel attached to their house the most (22%), then outdoor areas (17%), city/town (16%), vacation place (12%), community place (7%), country (4%), workplace (4%), neighborhood (3%), commercial place (3%), room in a house (2%), region (2%), object space (2%) and place of worship (1%).

Scannell And Gifford (2017) clustered the answers to the question asking for the psychological benefits of attached places, into 13 categories. These benefits are:

1. Memories (69%): Place attachment is reported to evoke memories of the participants and connect them to the past. The place of attachment enables them to connect the individuals to their roots and past memories.
2. Belonging (54%): Their attached place gives people feelings of belonging, “at homeness”, being loved, having connection with others and having roots in places as participants listed. They also stated that they feel the presence of their family there.
3. Relaxation (49%): Almost half of the participants stated that they feel comfortable, relaxed and liberated from stress when they are in a place they are attached to. It is also stated that attached places enable people to restore from stress and negativity.
4. Positive Emotions (38%): A considerable portion of the participants stated that the places they are attached to provides positive feelings to them, such as happiness, joy, peace, pride and hope. Among all happiness is the most frequently rated feeling.
5. Activity Support (33%): Approximately third of participants stated that the places they are attached support their works, interests, skills or hobbies.

The rest of benefits stated by the participants are:

6. Comfort and Security (31%)
7. Personal Growth (22%)
8. Freedom (19%)
9. Entertainment (19%)

10. Connection to Nature (11%)
11. Practical Benefits (9%)
12. Privacy (7%)
13. Aesthetics (7%)

Place attachment is investigated in other fields as well. For example, a study about post-disaster psychology of who had to relocate after disaster was conducted by Sara Sanders, Bowie and Bowie (2003). In this study, it is found out that even after relocating to a safe place after a disaster, people, who experienced excessive grief and distress, want to go back to places that they feel attached to, which are mainly their homes and neighborhoods. They suggested that examining place attachment in this field is illuminating the studies on post-disaster psychology.

As the globalization, aggressive environmental problems and mobility increases in our world, threats to the places that are important to people and the connections towards these places, thus the place-person connections become more and more fragile (Sanders, Bowie & Bowie, 2003). Another point is that place attachment provides people with experiencing higher sense of safety and mental restoration (Gifford, 2014a). Also, a study conducted in a smaller scale shows that people show less activities of incivility, such as gangster activities or drug dealing, in places they are attached to and in the neighborhood of these places (Brown, Perkins & Brown, 2003). These kinds of conservative and protective behaviors are welcome in design studios since firstly design students use many valuable

materials and the maintenance of the furniture provided by the school is important for the administration. Sense of security is important to maintain this safe atmosphere in design studios.

### **2.3. Educational Contributions**

University is considered to be a very important period in people's lives, which serves as a bridge from childhood towards adulthood. It is also considered to have a great significant impact on their journey to students' adulthood (Qingjiu & Maliki, 2013). Place attachment contributes to this period of university students, in terms of supporting characteristic improvement. Place attachment supports and encourages people to chase of what they aimed to (Kyle et al, 2004). Place attachment has a positive relationship with the level of undergraduate university students' confidence, will for exploration, affective responsiveness and freedom of behavior (Rollero & Piccoli, 2010). Also, it is discovered that attachment to university environment have a positive influence on the academic self-efficacy and better relationship with peers (Xu et al., 2015). These behaviors and characteristics are very preferable in design studios, to produce better projects and for one's personal and educational improvement.

Also, by building attachment to their university, students improve their coping skills which prevents them from dropping-out, academic failure or

unsatisfaction of achievements (Chow & Healey, 2008). As these studies have shown that establishing attachment to university positively affects people's moods, well-being and behavior. Along with these contributions, the study conducted by Vorkinn and Riese (2001) has shown that people with higher levels of attachment to a place also shows higher levels of conservative behavior towards their attached place. This means when people feel attached to a place they are more concerned with its well-being and maintenance. In design studios, conservancy would prevent students from harming the properties of their design studios, which would be very beneficial for sustaining the quality of properties for faculties.

## **2.4. Framework**

As Lewicka stated in her review on place attachment, there are many theoretical frameworks derived from various definitions suggested previously (2011). These frameworks include many predictors and/or dimensions that may be different from each other or may overlap. In the book chapter on theoretical aspect of place attachment, Hernandez and colleagues (2014) stated that some of the authors, who worked on place attachment previously, explain it with one-dimensional concepts, such as place identity or place dependence. They also revised other theoretical frameworks which consider place attachment as a multi-dimensional construct which are based on various numbers of dimensions ranging, from two to five (Hernandez, Hidalgo

& Ruiz, 2014). For example, Williams and Vaske (2003) suggested a two-dimensional model with its measurement, Kyle, Graefe and Manning (2005) suggested a three-dimensional model for place attachment which consists of place identity, place dependence, and social bonding; and Raymond, Brown and Weber (2010) suggested a five-dimensional model to explain and work on place attachment which consists of dependence, place identity, friend bonding, nature bonding and family bonding.

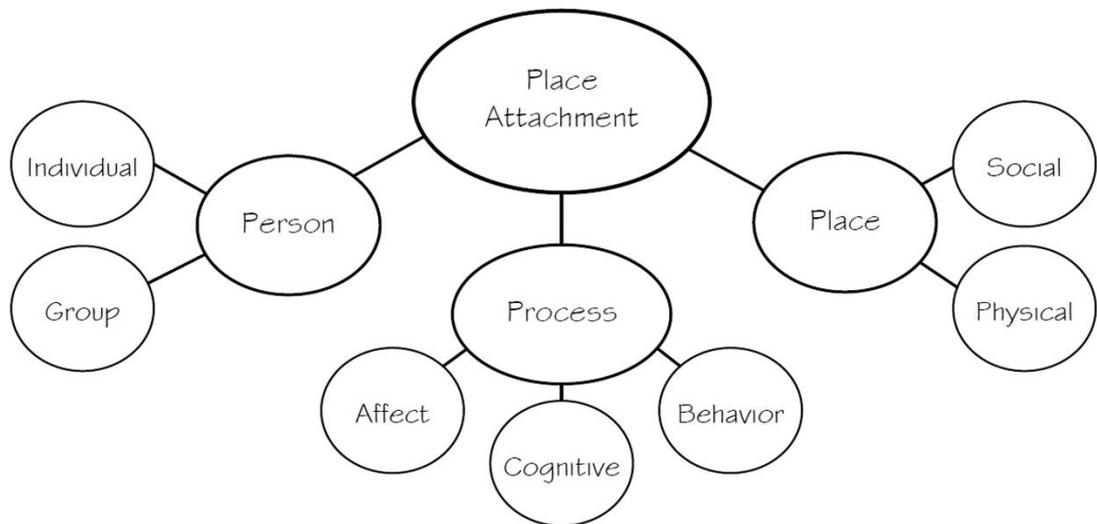


Figure 1: PPP Framework diagram

In the present thesis, the acquired framework is 'Tripartite Organizing Framework: PPP' suggested by Scannell and Gifford (2010). The purpose for their study was that there are lots of perspectives, definitions and models developed to explain place attachment, which makes it hard to work on place attachment. Thus, they revised the models and definitions that were

developed and suggested previously. Then they developed a model that combines all commonalities of previous models, definitions and studies.

PPP is a multi-dimensional framework and it treats place attachment with three dimensions, which are *person*, *psychological process* and *place*. First dimension, *person* is acknowledged in almost all the models suggested in previous studies. In PPP framework, person dimension may occur at individual level and group level. Individual level involves one person's bond with a place, while group level includes a bond that is shared with other people to a place.

Second dimension of PPP framework is *psychological process*. This dimension considers how an individual and/or group build attachment to a place and it has three components: affection, cognition and behavior.

Affection, as a component of place attachment, derives from the emotions that place of attachment evoke. Another component of psychological process dimension is cognition. It includes cognitive elements such as beliefs, memories, knowledge and meaning which make a place important for people. The last component of psychological process is behavior. Briefly, this component is concerned with how place attachment is expressed through people's behavior.

*Place* is the third dimension of PPP framework. It has two levels within: physical and social. Physical component of place in PPP framework is concerned with the physical qualities of a place that influences place attachment, such as proximity, amenities of a place and density. Other

component of place dimension is at social level. At this level, social relations and group identity is considered to be effective on place attachment.

The comprehensive approach of PPP framework is grabbed attention in many studies and suggested to be used in both empirical and theoretical studies on place attachment. With its compatibility with both qualitative and quantitative studies, and its higher inclusiveness (Hidalgo, 2013), PPP is chosen to be the framework of this thesis. Under the light of the strong and widely accepted constructions of PPP framework, the present thesis aims to work on place dimension of place attachment at both physical and social levels accepting PPP framework as a base for study.

## **2.5. Workplace Attachment**

Although in their study Scannell and Gifford (2017) revealed that people are not generally feel attached to their workplaces compared to other kind of places, such as home, country and vacation places; it is important for employees to feel attached to their workplaces to be more cooperative and enhance performance (Bogdan, Rioux & Negovan, 2012). Workplaces are also where people spend much of their daily life. Additionally, attachment of people to their workplace shows positive correlation with their job satisfaction and quality of work-life, as much as it improves well-being of the workers (Dinç, 2007). In the same study, Rioux and Pignault (2013) proved that when

the employees attached to their workplace they are less likely to leave their job.

As stated in the study conducted by Bogdan et al., undergraduate university students can be considered as both producers and consumers of academic services (2012). Which is why in the present thesis, university students are considered as such and it is found appropriate to study place attachment of university students with the scale of workplace attachment (Rioux, 2006)

## **CHAPTER 3**

### **TERRITORIALITY**

In this chapter, some of the previous studies are covered to explain the terms used in the present thesis. The definition, territoriality system and framework acquired in the present thesis are stated and explained. Also, possible contributions of territoriality and categorization of design studios regarding Altman's (1980) territories are provided and explained.

#### **3.1. Definition**

In literature there is no definition that authors reached consensus on but to understand it, definition of Gifford (2011) on territoriality is used in the present thesis. "Territoriality in humans is a pattern of behavior and experience

related to the control, usually by nonviolent means such as occupation, law, custom, personalization and marking, of physical space, objects, and ideas.”

To work on territoriality, it is useful to work with a system to classify territories. In this thesis, Altman’s (1981) system is used. By considering degree of privacy, accessibility and affiliation, he classifies territories into three categories: *Primary*, *Secondary* and *Public*. First category, *primary* territories, refers to places that are used by individual or group, almost exclusively. These places are generally used by the individual or group for a long time and relatively permanently. Primary territories generally play an important role in daily life, such as one’s bedroom or family home.

*Secondary* territories have less important role compared to primary territories, but they have a moderate significance for their users. These territories are generally used by an individual or a group of people on a regular basis, they are more likely to be rotated, changed or shared with other people. Examples for secondary territories would be favorite seat at the library or a table at a restaurant usually preferred by a group of friends.

The last category, *public* territories, are generally open to everyone, and shows least importance for their users. They are open to and shared with everyone who has permission, excluding individuals or groups because of certain reasons, such as bars or private clubs. Other examples for public territories would be sidewalk in the city, lounge of a hotel or parks.

In his system on territoriality, Altman (1981) suggests two more territories, which are not universally accepted as territories, they are *objects*, since people may show territorial behavior over objects such as books, computers, etc., and *ideas*. Gifford explain idea as a territory with the example of software authors, who try to defend their product from plagiarism by copyrights (Gifford, Steg & Reser, 2011).

Primary Territories	Almost exclusive to -Individuals -Primary groups	Relatively permanent Long-term	Central to daily life
Secondary Territories	Shared with: -Individual -Group	Regularly used or visited	-Significant to occupants -Less important
Public Territories	Shared with: -Public	No time	-Low awareness

Figure 2: Territories according to Altman's (1981) system

Brown (2009) stated that organizations are eligible places for territoriality, Firstly, with its many objects and places, people are easily territorial. And secondly, with its one of the most important objects in an organization, workplaces. In this thesis, territoriality to workplace of university students is examined.

Accepting the users of FF Building as the population, the studios in this study are divided into two, with respect to Altman's (1981) system of territoriality, as secondary and public studios. Studios accepted as secondary territories are

belong to Department of Architecture (ARCH) students, while the public studios belonged to Department of Interior Architecture and Environmental Design (IAED) students. This differentiation is made regarding the entrance systems of each department's studios. ARCH studios are entered by scanning university ID card and IAED studios do not have any control over entrance, which is why IAED studios are considered as public territories. To confirm this prediction, the questions related to territoriality based on validated instrument of Brown (2009) were asked.

### **3.2. Contributions**

As Altman (1981) states, territoriality is not only serves for privacy of an individual or a group. Although territoriality is generally associated with violence or aggressive behaviors, it supports communicating with others and regulates the social relations. It is suggested that territoriality reduces conflicts and increase the commitment of people to a setting (Brown et al., 2005). On the contrary to the negative beliefs on territoriality, it is found that personalization of an area is associated with staying in school for students, they are less likely to drop out of school, as they personalize their space at school (Vinsel et. al, 1980). Also, a study on psychiatry has shown that when people personalize their territories, their social atmosphere improves parallel to it (Holahan, 1976). All these behaviors are very preferable in design studios, since they would contribute to their education and overall productive and creative atmosphere of design studios.

### 3.3. Framework

Definition of territoriality suggests some characteristics for territoriality. These characteristics are providing right or ownership over a place; providing right to defend the place in case of an intrusion; personalize and/or marking an area; territories serve their users with their functions (Lang, 1987).

Brown and Robinson (2010) constructed a model for territoriality to measure its level in organizations. It is based on two main category of behavior, and four sub-categories. Main categories of this model are *marking* and *defending*. *Marking* is divided into two, *control-oriented* and *identity-oriented*, which are based on communicating with others by defining the boundaries of their workplaces to prevent any intrusion. First form of behavior, control-oriented marking, includes showing the psychological ownership of a workplace to others by marking it with an organizational object, such as putting a jacket on a chair, people may not know its owner, but they would know that someone is there. Second sub-category, identity-oriented marking or personalization includes modifying or decorating a workplace by objects that reflects its owner, such as putting a family photo on a table.

Second main category of territorial behavior is *defending*, which includes defensive behavior over the territory in case of an intrusion or because of the fear of an intrusion, and it has two sub-categories, *anticipatory* and *reactionary*. First, anticipatory behavior might be considered as a precaution that is taken prior to an intrusion, in other words, taking precaution assuming

that there will be an intrusion. Its examples can be locking the drawer in the workplace or setting a password for computer. Although organizational areas are where this kind of behavior is not welcome, anticipatory behavior still occurs. It is the act taken after attempt or occurrence of an intrusion. It may be shown in different ways, such as sending a warning e-mail to the intruder for the future, yelling at the intruder or complaining about the intruder to their supervisor or executive.

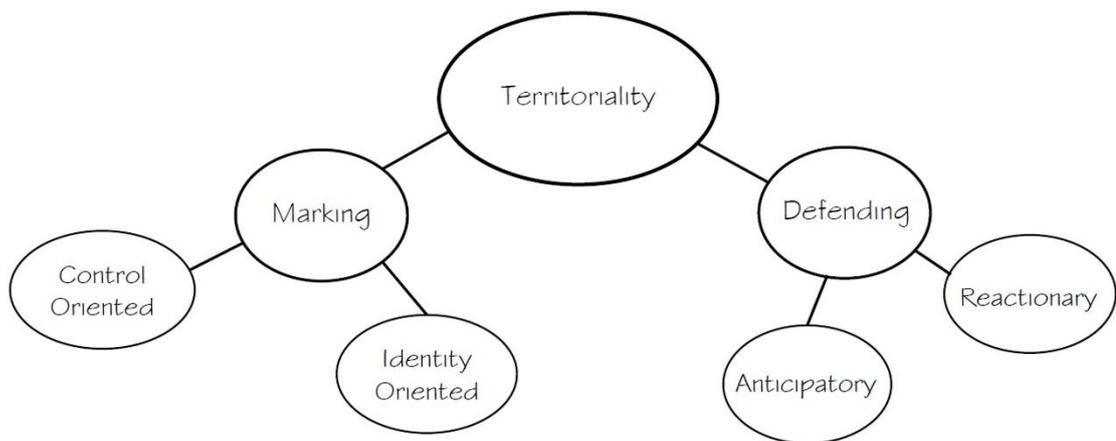


Figure 3: Territoriality framework of Brown & Robinson (2010)

Taking this theoretical framework into consideration, Brown (2009) suggested an instrument to measure territoriality, which consists of 23 statements clustered into four sub-categories in accordance with previously mentioned model. This instrument is applied on undergraduate university students in previous studies, which is why this instrument is found applicable to measure the level of university students' territoriality in this thesis, considering design studios as their workplaces (Brown, 2009).

### **3.4. Design Studios in Universities**

Design studios are fundamental parts of most kinds of design education. "It is the locus of architectural design learning and teaching, a setting where students communicate with one another and receive comments from the tutor." (Kvan & Jia, 2005, p.19). Design studios are the core of curriculum of design and design education, for being the application of all the knowledge received from the courses that are taught (Demirbaş & Demirkan, 2003). They function as both learning places and complex social organizations like any other traditional learning environment (Deasy & Laswell, 1985). However, they are different from a traditional classroom from the perspectives of the field of sociology, pedagogy, epistemology and ideology (Sagun, Demirkan & Göktepe, 2001). It is because they also serve as a place of learning through communication.

Learning process in design studio are based on constant communication between student to student and student to instructor. Design students are expected and encouraged to receive critics from their instructors and work in their studios (Demirkan, 2016). Also, design students spend most of their time at design studios, since they work there most and they sometimes help each other and work and share materials together.

To build a healthy environment for design education, investigation of both physical and psychological factors is essential. The aim of the present thesis is to examine the place attachment and territoriality in design studios of

design students because of these factors. Regarding the people as the population on the campus, since everyone on the campus have acces to the building, the territories of design studios are categorized. The studios may be seen as secondary territories for ARCH studios and public territories for IAED studios, regarding Altman's (1981) system of territories. These territories are suggested regarding the controlled access by having an electronical entrance system at design studios.

## **CHAPTER 4**

### **GENERAL EVALUATION OF ENVIRONMENTAL FEATURES**

In the present thesis, general evaluation refers to the environmental features of a space evaluated by its users. There are many studies about the impacts of physical and architectural qualities of a learning space on learning outcomes and behavior of students (Englebrecht, 2003; Fisher, 2001; Veltri, Banning & Davis, 2006). The significant effect of classroom environment on concentration levels, listening, and writing is supported by research results that have found higher test scores and more positive student outlooks in upgraded learning environments (Hill & Epps, 2010).

Studies have shown that a quality of learning environment have a positive impact on learning outcomes. Hill and Epps (2010) examined the relationship of classroom environment and students' satisfaction. They found out that students feel happier to come to the classroom that they evaluated their classrooms better and feel more satisfied with their classroom and they

evaluate their instructors' teaching more positively. Radcliffe (2008) suggested that pedagogy and the learning spaces are correlated with each other. In other words, the behavior and mood of the students are affected by their learning environment.

Asiyai (2014) conducted a study on physical qualities of learning spaces. The results showed that majority of students stated that physical quality of learning environment can enhance their motivation to learn and participate in academic activities. Also, a significant proportion of respondents stated that the physical quality of learning environment may influence the students' personal behaviors.

A study, based on interviews with architecture students, revealed physical factors and some of the learning outcomes of physical environment of studios (Ibem, Alagbe & Owoseni, 2017), The respondents were asked to list some physical components of a space. The answers were clustered into these physical components: lighting, seat/table arrangement, accessibility, ventilation/air quality, good acoustics, space furniture, color/materials and wall decorations/displays. Other question asked to the participants was to list the outcomes that physical components of a learning space influence. The results revealed that learning environment is influential on students' synergy, focus and self-esteem. It directly affects the comfort of its users. In terms of studio culture and productivity, the influence of a learning environment is projected on students' creativity to design. It was also reported that it affected the mental balance of students and level of concentration in learning space. I

also helped to reduce stress and to boost the motivation to learn. Lastly, it was reported that the level of comfort of the users enhanced design inspiration of architecture students.

Sommer and Olsen (1980) created a learning environment called “soft classroom”. They altered seating arrangement, materials used in classrooms and furniture to create soft classroom. Their experiment revealed that where the environment which students evaluated pleasing, performance of the students was increased, and the discussions were enhanced.

Considering aforementioned studies which investigated the relation between learning environments, behavior and feelings of students, the present thesis aims to understand whether the place attachment and territoriality affect evaluation of the students about their physical environment. Since learning outcomes mentioned above and positive attitude are preferred and expected for a successful education in design studios, measuring the correlation between these factors are also considered as important.

In the present thesis, the instrument used to evaluate the physical qualities of an interior is “İç uzamlar için genel bir değerlendirme ölçütü” (İmamoğlu, 1981). This instrument includes adjective couples, such as tidy/untidy and open/closed, to describe the interiors. These adjective couples are utilized to be rated on a binary scale. This instrument and how it was utilized is explained in more depth in Chapter 5: Methodology.

## **CHAPTER 5**

### **METHODOLOGY**

In this chapter the methodology of the present thesis is explained. The research questions and hypotheses are presented. Then the demographic information of the respondents is explained in 'Sample'. The instrument utilized to measure place attachment and territoriality and other items are explained. Lastly, the setting, where the study was conducted, and procedure of the study were presented and explained.

#### **5.1. Research Questions**

Does territoriality level of design studios have a relationship with workplace attachment level of students who work in design studios?

**Q.1:** Is there a significant relationship of territoriality level of a design studio with level of workplace attachment of students?

**Q.2:** Does territoriality have a relationship with general evaluation of workplace among design students?

**Q.3:** Does workplace attachment have a relationship with general evaluation of workplace among design students?

**Q.4:** Does having an electronic entrance system have a relationship with level of place attachment towards design studio?

**Q.5:** Does having an electronic entrance system have a relationship level of territoriality towards design studio?

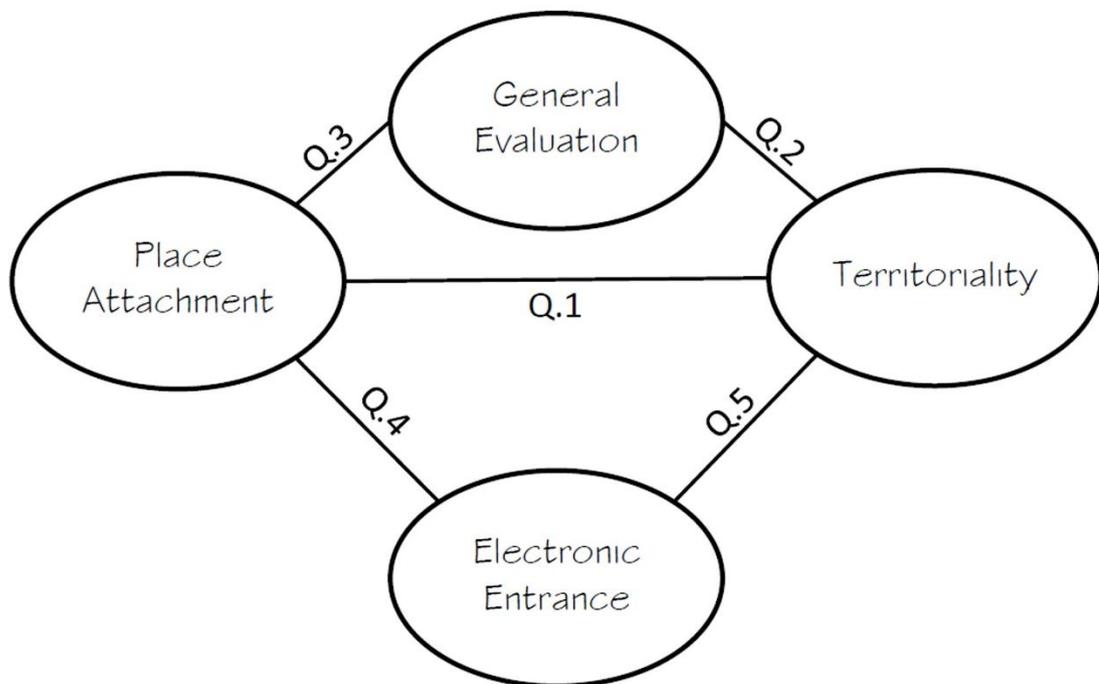


Figure 4: Diagram of research questions

## **5.2. Hypotheses**

**H.1:** There is a positive relationship between having controlled access to design studios and place attachment of users of design studios.

**H.2:** There is a positive relationship between having controlled access to design studios and territoriality of users of design studios.

## **5.3. Sample**

The sample of this study consisted of 150 second and third year undergraduate students of Interior Architecture and Environmental Design (IAED) and Architecture (ARCH) departments at I.D. Bilkent University with a mean age of 21. Participants' ages are ranged between 18 to 26. Gender distribution of the participants is as such; 110 (73 %) female and 40 (27%) male. The students of 2<sup>nd</sup> and 3<sup>rd</sup> year design studios in 2017-2018 Spring semester are chosen as the sample of the study because the students of these courses have at least one year of experience of working in design studios. Also, 1<sup>st</sup> year design students did not show any kind of bond with their design studios and they were not aware of the nature of education of design studios. 4<sup>th</sup> year students are not included in because, preliminary study of the questionnaire showed that 4<sup>th</sup> year students are under the impact

of graduation since the study was conducted in their last semester in the university as students. Before conducting the survey, the questionnaire was delivered to six 4<sup>th</sup> year students to evaluate whether the questions are clear since they were translated to Turkish. The respondents approved the clarity of the statements in the questionnaire, however they commented on some of the questions such as “I used to not like my studio but I will be graduated soon, so I will miss it anyways” and “This is the last semester of my education but I would want to come back after summer holiday like the past years”. Also, the courses 2<sup>nd</sup> and 3<sup>rd</sup> year students took had similar educational content and lecture hours and they were held in physically similar studios.

Eighty-seven (58%) from IAED and 63 (42%) from ARCH departments. Education levels, ages and aesthetic judgements of the participants were expected to be similar, to fairly evaluate their workplaces, design studios. The students had the similar physical environments as their workplaces, except for the entry system. IAED students have more commonly used studios which are available to anyone on the campus, while ARCH students have ID card entry system which does not allow outsiders to come in.

#### 5.4. Questionnaire

The participants responded to a survey which included questions about workplace attachment, territoriality, general evaluation about the participants' studios and demographic questions (See Appendix A and Appendix B).

There are statements asked participants to rate about sense of community, sense of belonging, positive feelings and attitude towards the case of leaving the studio permanently.

Firstly, for measuring workplace attachment, Rioux's scale of workplace attachment (Echelle d'Attachement au Lieu de Travail-EALT) (2006) was adapted to the present study, since it was previously used for measuring place attachment of university students (Bogdan et al., 2012). This instrument is based on the works of Altman and Ginat (as cited in Rioux & Pignault, 2013) and whose convergent and discriminant validity is supported in the study of Fabrizio Scrima (2015). Workplace Attachment Scale (WAS) consists of 6 items. However, in this thesis eight items related to attachment were asked since two of the items are asked for both studios and working spaces of each participant. The numbers of questions related with workplace attachment were 3, 8, 11, 12, 16, 18, 20 and 21 on the questionnaire (Table 1). The participants were asked to rate these statements on a 6-point rating scale, stating 1 (strongly disagree) to 6 (strongly agree). 6-point Likert scale was used to make participants more discriminating towards positive and negative answers, to push them to choose a side and to avoid misuse of

neutral option. Also, as Leung (2011) stated in their study, the scale points between 4-5-6 do not affect the criterion-related validity.

**Table 1:** Table of workplace attachment items from questionnaire with numbers and statements, adapted from Workplace Attachment Scale (Rioux, 2006).

<b>Question Number</b>	<b>Workplace Attachment Item Statement</b>
3	There are certain places in this studio to which I am particularly attached.
8	I am attached to my workplace.
11	There are places in this studio which bring back memories.
12	There are things in this workplace which bring back memories.
16	If the studio had to move, I would regret my current workplace.
18	This workplace is part of my inner-self.
20	After a holiday, I am happy to go back to this studio.
21	After a holiday, I am happy to go back to this workplace.

Secondly, to measure territoriality of the students towards their design studios, four-factor measure of territoriality of Graham Brown (2009) was used. Although the original scale consisted of 23 items, in the present thesis, 6 items were used to measure territoriality. However, 3 of the items were removed from this scale later, because statistical reliability test conducted on territoriality items showed that these items caused a steep fall in reliability score of the scale. The numbers of questions related with territoriality are 9,

10 and 24 on the questionnaire (Table 2). Numbers of omitted items on questionnaire were 17, 19 and 24. These items were evaluated on a 6-point rating scale. These 3 items were compressed and derived from the items of 4 theoretical bases of the scale.

**Table 2:** Table of territoriality items from questionnaire with numbers and statements, adapted from Graham Brown’s study (2009). The items marked with “\*” were removed in statistical calculations.

Question Number	Territoriality Item Statement
9	There are things that show the workplace is mine.
10	I leave belongings to use afterwards.
17*	I let other people to use my workplace.
19*	There were others that used my workplace without my permission.
24	People know that this workplace belongs to me.
27*	I ask people to hold my workplace when I am not here.

Thirdly, to measure general evaluation of the design studios, “İç uzamlar için genel bir değerlendirme ölçütü” of Vacit İmamoğlu (1981), which consists of 17 items to be evaluated on 6-point binary scale was used. However, one of the items, crowded-isolated couple, is excluded from the evaluation, since it does not reflect positivity or negativity. The binary items are illustrated on Table 3.

**Table 3:** Table of general evaluation items from questionnaire with numbers and statements. The items marked with “\*” was removed in statistical calculations.

<b>Line</b>	<b>General Evaluation Item Statement</b>
1	Untidy – Tidy
2	Ill-planned – Well-planned
3	Tiny - Huge
4	Repellant – Welcoming
5	Ill-balanced – Well-balanced
6	Incompatible - Compatible
7	Small – Big
8	Uninhabitable - Inhabitable
9	Narrow – Wide
10	Ill-organized – Well-organized
11	Close – Open
12	Disturbing – Calming
13	Uncomfortable – Comfortable
14	Crammed – Spacious
15*	Isolated – Crowded
16	Ill-proportioned – Well-proportioned
17	Limiting-space – Free-space

In addition to these, there are fourteen more questions asked participants to respond on the questionnaire. These questions aim to understand the participants’ sense of community and belonging in their studios, positive feelings towards their studios and feelings in case of leaving their studios. The items asked to respondents are listed on Table 4.

**Table 4:** Table of items related with positive feelings, response in case of leaving, sense of belonging and sense of community.

<b>Subject Name</b>	<b>Question Number</b>	<b>Related Item Statement</b>
<b>Positive Feelings</b>	1	I feel safe in this studio.
	2	I feel comfortable when I leave my belongings in studio.
	13	This studio is somewhere I feel comfortable.
	22	I feel at home in this studio.
	23	I feel at home at this workplace.
	25	This studio is somewhere I like.
<b>Response in case of leaving</b>	26	This workplace is somewhere I like.
	4	I would not give up on my studio.
<b>Sense of Belonging</b>	5	I would not give up on my workplace.
	7	I do other things in the studio beside studio works (e.g. reading, painting, etc.)
	14	I feel this studio belongs to me.
	15	I feel this workplace belongs to me.
<b>Sense of Community</b>	28	I spend time in this studio beside class hours.
	6	We share/buy materials and objects with others in this studio.

Lastly, the survey was anonymously filled out, however there were questions on demographic information, such as age, gender, department; and questions related with the use of design studios and feelings toward their design studio.

## 5.5. Setting

This study was conducted in the rooms FFZ05, FFZ07, FFZ08, FFZ10, FF105, FF106, FF107, FF205, FF207, FF305 and FF308 in Bilkent University FF Building, which were used as design studios by either Department of Interior Architecture and Environmental Design or Department of Architecture. All of these studios were approximately the same, in terms of material (white walls and ceiling, granite colored terrazzo floor and white working tables) and size (Figure 1 & 2). FF106, FF105, FF305, FF308, FF205 and FF207 belonged to Interior Architecture and Environmental Design students, which were available to everyone in the building. FFZ05, FFZ07, FFZ08 and FFZ10 were used by only the students of those studios and were entered by scanning ID cards at the door (Table 4 & 5).



Figure 5: General look of design studio FFZ 10 (ARCH Studio)



Figure 6: General look of design studio FFZ 10 (ARCH Studio)



Figure 7: General look of design studio FF 105 (IAED Studio)



Figure 8: General look of design studio FF 105 (IAED Studio)

**Table 5:** Table of classroom distribution of respondents from IAED department's studios.

<b>IAED Department</b>	
<b>Room Number</b>	<b>Number of Students</b>
FF 106	10
FF 305	19
FF 105	8
FF 308	11
FF 205	17
FF 207	20
FF 107	2
<b>Total: 87</b>	

**Table 6:** Table of classroom distribution of respondents from ARCH department's studios.

<b>ARCH Department</b>	
<b>Room Number</b>	<b>Number of Students</b>
FFZ 08	9
FFZ 07	11
FFZ 10	28
FFZ 05	15
<b>Total: 63</b>	

### **5.6. Procedure**

The questionnaire was delivered and collected, during their studio hours. The reason for conducting the surveys in their working environment was to enable respondents to retrieve the information and feelings that were asked in the survey. The survey was delivered in one week to all studios; between 2<sup>nd</sup> of May and 9<sup>th</sup> of May, since this week was the last week of design courses in both departments. We chose to conduct the survey at the end of the semester to enable students to establish a bond with their workplaces and studios, if possible. All courses were held at the same time of the day at physically similar studios mentioned and illustrated above, between 13:40-17:40. At the beginning of the survey, conductor of the study explained how to mark on the survey. The survey took 10 to 15 minutes, then the surveys filled out by volunteered respondents were collected. The responses were

entered to SPSS (Statistical Package for the Social Sciences) program and open-ended questions were evaluated.

To reach to more rational results, the answers to the question “How much time do you spend in your design studio weekly?” which did not provide quantitative responses, such as “a lot” were examined. To do this, assistance of a reporting specialist was acquired. The specialist offered a calibration and categorization, by calculating and comparing the answers with each other. The suggestions were to accept “a lot” as 8 hours a week, since participants who answered this question with both quantitative and nominal answers stated that one and a half hour each week day is enough for design courses. Another category of answers was related to juries and project submission. Participants stated that they spend at one or two days at their studios before their submissions. Its calculation is as such, spending two days working 12 hours a day, accepting they have jury or submissions each month, equals to 6 hours per week. Also, one of the participants stated that he/she spent one day at design studio every week, and this answer is accepted as 15 hours a week. Another participant stated that he/she did required drawings before studio hours, and it is accepted as 4 hours per week since drawings of a project take 2 hours approximately and design studios are twice a week.

## **CHAPTER 6**

### **RESULTS**

In this chapter, the results gathered through the questionnaire is presented. The data was analyzed using Statistical Package for the Social Sciences (SPSS 24.0). Descriptive statistics, correlation matrices, independent samples T-Test, factor analysis and reliability tests were used in the analysis stage. Results of the analysis were given respectively according to research questions.

#### **6.1. Descriptive Statistics**

To have a general understanding of the data, frequencies and descriptive statistics were calculated. Background information of respondents will be presented in this subject. Total number of respondents was 150. 87 (58 %) of

the respondents were from IAED department and 63 (42 %) of the respondents were from ARCH department. The distribution of respondents according to their classrooms within the building was illustrated on Table 5 and Table 6.

Average of studio grades of the respondents was asked in questionnaire. The distribution was as such; 12% of the respondents' average design studio grade was 'A/A-', 61% of the respondents' average design studio grade was 'B+/B-', 25% of the respondents' average design studio grade was 'C+/C-' and one of the respondent marked 'D/F' as average design studio grade. The grade distribution of respondents is illustrated on Table 7 with their input values as entered on SPSS data.

**Table 7:** Grade distribution of respondents and their input values on SPSS.

<b>Grade</b>	<b>Number of Students</b>	<b>Percentage</b>	<b>Input Value on SPSS</b>
<b>A/A-</b>	18	12.0	4
<b>B+/B-</b>	92	61.3	3
<b>C+/C-</b>	38	25.3	2
<b>D/F</b>	1	0.7	1
<b>Missing</b>	1	0.7	9
<b>Total: 150</b>			

Frequency of attendance was asked to respondents with three options, always, generally and when compulsory. 73% of the respondents marked

'always', 21% of the respondents marked 'generally' and 5% of the respondents marked 'when compulsory'. One of the participants did not respond to this question. The attendance distribution of respondents is illustrated on Table 8 with their input values as entered on SPSS data.

**Table 8:** Attendance distribution of respondents and their input values on SPSS.

<b>Attendance</b>	<b>Number of Students</b>	<b>Percentage</b>	<b>Input Value on SPSS</b>
<b>Always</b>	110	73.3	3
<b>Generally</b>	32	21.3	2
<b>When Compulsory</b>	7	4.7	1
<b>Missing</b>	1	0.7	9
<b>Total: 150</b>			

Additionally, to understand the impact of familiarity to environment, familiarity to design studio and building were asked. Mean familiarity to the design studio of the respondents was 1.66 semesters. Respondents' familiarity to their design studios was ranged between one to six semesters. Also, mean familiarity to FF Building on Bilkent University campus, where current design studios of all the respondents were located, was 4.47 semesters. Standard deviation was 1.54 ranged between two to eight semesters.

## 6.2. Correlations

Analyzing the correlation scores is important to understand the degree of relationship between items. To create the correlation matrices and find correlation scores, Pearson Correlation Coefficient was used. Correlation scores are ranged between 1.00 to -1.00. 1.00 means perfect positive association between variables, while -1.00 means perfect negative association and 0 means no relationship between variables.

Correlation scores of 13 variables were calculated. These variables were department, familiarity to studio, familiarity with building, grade, frequency of attendance, time spent in studio, place attachment, territoriality, evaluation, feelings, leaving, belonging and community. Table 9 illustrates the relationship of five variables with each other at 0.05 significance level (See also Appendix C.1.).

**Table 9:** Correlation table of five variables; department, time spent in design studio, place attachment, territoriality and evaluation.

	Dept	Time spent in studio	Atch	Tertr	Evalt
Dept	1				
Time spent in studio	,410**	1			
Attachment	,010	,059	1		
Territoriality	,375**	,378**	,539**	1	
Evaluation	-,278**	-,059	,297**	-,007	1

Correlation is significant at the 0.01 level (2-tailed).\*\*

The present thesis focused on the relationship between place attachment and territoriality. Thus, the correlation of these two and other items will be discussed. Firstly, the relationship between place attachment and territoriality is positive and moderate,  $r(148) = .54, p < .01$ . Place attachment has a positive correlation with general evaluation,  $r(148) = .30, p < .01$ . Place attachment has a positive moderate relationship with positive feelings,  $r(148) = .65, p < .01$ ; response to leaving,  $r(148) = .67, p < .01$ ; and sense of belonging,  $r(148) = .62, p < .01$ . There is a positive low association between place attachment and sense of community,  $r(148) = .34, p < .01$ . Also, place attachment has a low association with frequency of attendance to class hours,  $r(148) = .23, p < .01$ . Relationship of place attachment to other variables were not significant.

Correlation scores of territoriality and other variables are also calculated on SPSS. The highest association of territoriality is with sense of belonging,  $r(148) = .63, p < .01$ . Territoriality has a positive low association with department,  $r(148) = .38, p < .01$ ; which means ARCH students territoriality level was higher than IAED students. Territoriality has a weak association with time spent in studio,  $r(148) = .38, p < .01$ . Also, it has a weak relationship with frequency of attendance to class hours,  $r(147) = .29, p < .01$ . There are moderate associations to territoriality occurred with positive feelings,  $r(148) = .47, p < .01$ ; and response to case of leaving,  $r(148) = .48, p < .01$ . Also, there is a low association between territoriality and sense of community,  $r(148) = .43, p < .01$ .

Evaluation of respondents was also analyzed. Evaluation has a positive moderate association with positive feelings towards design studio,  $r(148) = .41, p < .01$ . There is a negative association between general evaluation of respondents and their departments,  $r(148) = -.28, p < .01$ ; which means respondents from IAED department evaluated their studios more positively than ARCH students evaluated their studios. Evaluation has a positive low association with frequency of attendance,  $r(147) = .20, p < .01$ . It also has a low association with sense of belonging,  $r(148) = .25, p < .01$ ; and case of leaving,  $r(148) = .25, p < .01$ .

There are statistically significant relationships of department with some other variables. Firstly, there is a positive low association between department of the respondents and their frequency of attendance to class hours,  $r(147) = .27, p < .01$ . Secondly, there is a positive moderate relationship between department of the respondents and the time they spend in design studio outside of class hours,  $r(148) = .41, p < .01$ . Also, department has a positive low association with sense of belonging,  $r(148) = .22, p < .01$ ; and sense of community,  $r(148) = .33, p < .01$ .

High correlation scores on correlation table are as such. There is a strong correlation between sense of belonging and positive feelings of respondents,  $r(148) = .74, p < .01$ ; which is a statistically strong and positive relationship at 0.05 significance level. Response to case of leaving has moderate positive relationships with belonging items,  $r(148) = .59, p < .01$ ; and positive feelings,  $r(148) = .53, p < .01$ .

Other correlations illustrated on correlation table are occurred between grade of respondents and their frequency of attendance to class hours,  $r(147) = .24, p < .01$ . Attendance also has positive low associations with territoriality,  $r(147) = .23, p < .01$ ; positive feelings,  $r(147) = .26, p < .01$ ; response to case of leaving,  $r(147) = .24, p < .01$ ; sense of belonging,  $r(147) = .27, p < .01$ ; and sense of community,  $r(147) = .22, p < .01$ . There is a positive low association between time spent in studio out of class hours and sense of belonging,  $r(148) = .36, p < .01$ .

Also, sense of community within design studio has a positive moderate relationship with sense of belonging,  $r(148) = .43, p < .01$ . It has a positive low association with response to case of leaving,  $r(148) = .37, p < .01$ . Sense of community also has positive low association with positive feelings,  $r(148) = .25, p < .01$ ; and their time spent in design studio,  $r(148) = .21, p < .01$ .

Lastly, gender showed no relationship with other variables.

### **6.3. Mean Comparison of Variables According to Departments**

Mean comparisons of 12 items (place attachment, territoriality, evaluation, positive feelings, leaving, sense of belonging, sense of community, time spent in design studio, familiarity to studio, familiarity to building, grade and frequency of attendance) were analyzed with Independent Samples T-Test, accepting grouping variable as department. The results of mean comparisons

are illustrated on Table 10 with their significance levels (See also Appendix C.2.).

Test results revealed that there was no statistically significant difference between means of IAED, with a mean of 2.71 (SD= 1.01), and ARCH students with a mean of 2.73 (SD= 1.03) for place attachment scores at 0.05 alpha level ( $t= -1.22$ ,  $p=0.90$ ). There was a statistically significant difference found in means of territoriality scores between IAED students with a mean of 2.75 (SD= 1.13) and ARCH students with a mean of 3.67 (SD= 1.12) students at 0,05 alpha level ( $t= -4.92$ ,  $p= 0.00$ ). On average IAED students' general evaluation of their studios was found to make average 4.03 (SD= 0.95), while ARCH students' evaluation was found to make average 3.53 (SD= 0.74). The difference between IAED and ARCH students' general evaluation was found significantly different at the 0,05 alpha level ( $t=3.65$ ,  $p=0.00$ ).

**Table 10:** Comparison of means regarding IAED and ARCH departments

	<b>Dept</b>	<b>N</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Std. Error Mean</b>
<b>Familiarity to Studio</b>	IAED	87	1,86	,73	,08
	ARCH	63	1,38	,49	,06
<b>Familiarity to Building</b>	IAED	87	4,68	1,38	,15
	ARCH	63	4,17	1,70	,22
<b>Grade</b>	IAED	87	2,77	,64	,07
	ARCH	62	2,97	,57	,07
<b>Attendance</b>	IAED	87	2,56	,64	,07
	ARCH	62	2,87	,33	,04
<b>Time spent in studio</b>	IAED	87	3,41	3,95	,42
	ARCH	63	8,70	7,73	,97
<b>Attachment</b>	IAED	87	2,71	1,01	,11
	ARCH	63	2,73	1,02	,13
<b>Territoriality</b>	IAED	87	2,75	,72	,08
	ARCH	63	3,67	,74	,09
<b>Evaluation</b>	IAED	87	4,03	,94	,10
	ARCH	63	3,53	,74	,09
<b>Feelings</b>	IAED	87	3,39	1,10	,12
	ARCH	63	3,44	1,09	,14
<b>Leaving</b>	IAED	87	2,81	1,40	,15
	ARCH	63	3,04	1,28	,16
<b>Belonging</b>	IAED	87	3,24	1,27	,14
	ARCH	63	3,79	1,16	,15
<b>Community</b>	IAED	87	3,59	1,65	,18
	ARCH	63	4,68	1,49	,19

According to the results of t-tests, there was a significant difference found in familiarity to their studios between IAED students with a mean of 1.86 (SD= 0.73) and ARCH students with a mean of 1.38 (SD= 0.49) at 0.05 alpha level ( $t= 4.52$ ,  $p= 0.00$ ). IAED students were found to spend 3.42 per week on average in their design studios (SD= 3.95) and ARCH students were found to spend 8.70 per week on average in their design studios (SD= 7.74). This was accepted as a statistically significant difference at 0.05 alpha level ( $t= -4.97$ ,  $p= 0.00$ ).

There was no significant difference found in means of positive feelings of IAED students, with a mean of 3.39 (SD= 1.10) and ARCH students with a mean of 3,44 (SD= 1,09) at 0.05 alpha level ( $t= -0.02$ ,  $p= 0.81$ ). There was no significant difference found between responses of IAED students ( $M= 2.81$ ,  $SD= 1.40$ ) and ARCH students ( $M= 3.04$ ,  $SD= 1.28$ ) for in case of leaving at 0,05 alpha level ( $t= -1.03$ ,  $p= 0.31$ ). Respondents from IAED department rated sense of belonging 3.23 on average (SD= 1.27), while ARCH students rated sense of belonging 3.79 on average (SD= 1.16). This was found as a statistically significant difference at 0.05 alpha level ( $t= -2.71$ ,  $p= 0.01$ ). Also, IAED students rated 3.59 for sense of community (SD= 1,65) and ARCH students rated 4.68 for sense of community (SD= 1.49) at 0.05 alpha level ( $t= -4.19$ ,  $p= 0.00$ ).

Other mean comparison was conducted between 2<sup>nd</sup> and 3<sup>rd</sup> year students. There was a significant difference was found in means of general evaluation score of 2<sup>nd</sup> year students, with a mean of 3.94 (SD= 0.91), and 3<sup>rd</sup> year, with

a mean of 3.61 (SD= 0.84). Also, there is a significant difference found in means of familiarity to building of 2<sup>nd</sup> year students, with a mean of 3.69 (SD= 1.25), and 3<sup>rd</sup> year, with a mean of 5.89 (SD= 0.89).

#### **6.4. Factor Analyses**

In the present study, factor analysis of the items of place attachment, territoriality and evaluation are calculated, to find the factors determining the overall scores of these in higher-order rank.

First factor analysis was conducted for place attachment items. Overall score for place attachment was calculated based on means of eight statements.

Question numbers on the questionnaire are; 3, 8, 11, 12, 16, 18, 20, 21).

Statements of place attachments questions with their numbers on questionnaire are given on Table 1. From these eight items, two components were emerged, which accounted for 61.54 percent of the variance (See Table 12 and Table 13). Two higher-components of place attachment are named as 'connection with the place' and 'coming back after a break'. The items included in the first component, connection with the place, there are the statements of; question 12 with an eigenvalue of 0.81; question 11 with an eigenvalue of 0.72; question 18 with an eigenvalue of 0.69; question 8 with an eigenvalue of 0.67 and question 3 with an eigenvalue of 0.64 in order. These statements were accounted for 33.42 percent of total variance. The second component 'coming back after a break' included the statements of; question 21 with an eigenvalue of 0.92; question 20 with an eigenvalue of

0.82 and question 16 with an eigenvalue of 0.62. These statements were accounted as 28.12 percent of total variance (See Table 12 and Appendix C.3.).

**Table 11:** Rotated component matrix of factor analysis for place attachment items

	<b>Component</b>	
	<b>1</b>	<b>2</b>
<b>Question 12</b>	,807*	,311
<b>Question 11</b>	,721*	,251
<b>Question 18</b>	,694*	,366
<b>Question 8</b>	,665*	,207
<b>Question 3</b>	,644*	-,105
<b>Question 21</b>	,093	,915**
<b>Question 20</b>	,139	,823**
<b>Question 16</b>	,371	,623**

Component 1\*

Component 2\*\*

Second factor analysis was conducted for territoriality items. Overall score for territoriality was based on means of three statements. Question numbers on questionnaire are 9, 10, and 24. There was only one component derived from this analysis. Eigenvalue of question 9 was 0.79. Question 24's eigenvalue was 0.76 and question 10's was 0.73. These items were accounted as 58.07 % of total variance (See Table 12 and Appendix C.4.).

**Table 12:** Component Score Coefficient Matrix of factor analysis for territoriality items

	<b>Component 1</b>
<b>Question 9</b>	,454*
<b>Question 10</b>	,421*
<b>Question 24</b>	,437*

Component 1\*

Third factor analysis was conducted for evaluation items. Overall score for evaluation was based on means of 16 binary items, which of each includes adjective couples. General evaluation items are located on the last page of the questionnaire. The results of factor analysis conducted on these items emerged four components. These components accounted for 68.65 percent of variance. Four higher-components of territoriality were named as 'design', 'planning', 'size' and 'perception'. The first component named 'Design' consisted of seven items; number 1-Tidiness, with an eigenvalue of 0.76; number 11-Openness, with an eigenvalue of 0.73; number 10-Arrangement, with an eigenvalue of 0.67; number 6-Harmony, with an eigenvalue of 0.64; number 5-Balance, with an eigenvalue of 0.63; number 13-Comfort, with an eigenvalue of 0.60 and number 17-Limitation, with an eigenvalue of 0.59. These items included in component 'design' were accounted for 22.91 percent of variance. The second component named 'Planning' consisted of three items; number 2-Planning, with an eigenvalue of 0.83; number 4-Invitingness, with an eigenvalue of 0.77, and number 16-Proportionality, with

an eigenvalue of 0.60. These items included in component 'planning' accounted for 17.21 percent of variance. The third component 'Size' consisted of three items; number 7-Largeness with an eigenvalue of 0.82, number 3-Extensiveness, with an eigenvalue of 0.80 and number 9-Wideness, with an eigenvalue of 0.78. These items included in component 'size' were accounted as 15.02 percent of variance. The last and fourth component was named 'Perception' included items; number 12-Calmingness, with an eigenvalue of 0.81; number 8-Habitability, with an eigenvalue of 0.75, and number 14-Spaciousness, with an eigenvalue of 0.51. These items were accounted for 13.51 percent of variance (See Table 13, Appendix C.5. and C.6.).

**Table 13:** Table of components emerged from factor analysis on general evaluation items.

<b>Component Name</b>	<b>Item Number</b>	<b>Item Name</b>
<b>Component 1: Design</b>	1	Tidiness
	11	Openness
	10	Arrangement
	6	Harmony
	5	Balance
	13	Comfort
	17	Limitation
<b>Component 2: Planning</b>	2	Planning
	4	Invitingness
	16	Proportionality
<b>Component 3: Size</b>	7	Largeness
	3	Extensiveness
	9	Wideness
<b>Component 4: Perception</b>	12	Calmness
	8	Habitability
	14	Spaciousness

### 6.5. Reliability Tests

Reliability tests were conducted on scales of workplace attachment, territoriality and general evaluation of interiors. A reliability test was carried out on the workplace attachment scale consisting of eight items. The

Cronbach's alpha score for workplace attachment was 0.82, which provides a highly acceptable reliability. All items appeared to be resulting in a decrease in the alpha if deleted, thus they are appeared to be acceptable in terms of reliability (See Appendix C.7.).

The second reliability test was conducted on the items of territoriality scale which was consisted of 6 items at the beginning of the research. Its Cronbach's alpha reached to 0.26, which is not an acceptable result for reliability test. The questions, number 17, 19 and 27 were removed from study, because question 17 increased alpha to 0.45 when deleted, question 19 increased alpha to 0.40 and question 27 increased alpha to 0.12. Thus, these items were removed from the study. The Cronbach's alpha increased to 0.64 for total scale of territoriality items. Question 9 decreased Cronbach's alpha to 0.49 if deleted; question 10 decreased Cronbach's alpha 0.58 if deleted and question 24 decreased Cronbach's alpha to 0.54 if deleted (See Appendix C.8.).

The last reliability test was conducted on items of general evaluation. The Cronbach's alpha for the scale which consisted of 16 items is 0.92. The Cronbach's alpha decreased to 0.91 if item 1 was removed; 0.91 if item 2 was removed; 0.92 if item 3 was removed; 0.91 if item 4 was removed; 0.91 if item 5 was removed; 0.91 if item 6 was removed; 0.92 if item 7 was removed; 0.91 if item 8 was removed; 0.91 if item 9 was removed, 0.91 if item 10 was removed; 0.91 if item 11 was removed; 0.92 if item 12 was removed; 0.91 if

item 13 was removed; 0.91 if item 14 was removed; 0.91 if item 16 was removed and 0.91 if item 17 was removed from the scale (See Appendix C.9.).

## **CHAPTER 7**

### **DISCUSSION**

In the present thesis, the impact of controlled access in design studios on territoriality and place attachment towards design studios was studied. We examined the relationship between territoriality and having controlled access to design studio. We hypothesized that there is a positive relationship with place attachment and having controlled access to design studio.

Place attachment was examined through the place dimension on social and physical levels, as in PPP framework (Scannell & Gifford, 2010). Social level of place dimension is examined by territoriality level. The positive correlation of place attachment with territoriality supported the social level of a place is related with place attachment. The physical level of place dimension is examined by evaluation of environmental qualities of a space. The correlation between place attachment and general evaluation ratings supported this connection.

We adapted Rioux's (2006) scale of workplace attachment to measure place attachment and items from Brown (2009)'s scale to measure territoriality. Also, to measure evaluation of the students towards their studios, we used Imamoğlu's (1981) evaluation scale for interiors.

The research questions were examined regarding the correlation and mean comparison results. To answer the first question about the relationship between place attachment and territoriality, the result of correlation between them was examined. Their correlation showed a positive relationship. To answer the second question, the results of correlation between place attachment and general evaluation of design studios was analyzed. The correlation between place attachment and positivity of general evaluation showed positive relationship. To answer the third research question, correlation between territoriality and positivity of general evaluation was examined. There was no significant relationship found between them. However, this question would have been answered with a positive relationship and the correlation scores might have been different, if all the participants experienced both types of studios with different entrance systems, controlled and uncontrolled, for a certain time, since they would be able to compare them fairly in any aspect, which would result differently.

Additionally, the fourth and fifth research questions which were about the relationship of having an electronical entrance system to control access with place attachment and territoriality. The results of mean comparisons were

examined by taking grouping variable as department since it is the indicator of having an electrical entrance system of studios. The fourth question which examined the relationship between place attachment and having an electrical entrance system to design studios, revealed no relationship. And the results which aim to answer the fifth question, about the relationship between territoriality and having an electrical entrance system, revealed that there was a difference between territoriality levels of two departments. However, since there was a relationship between territoriality and place attachment as supported by correlation results, there may be an indirect relationship between having an electrical entrance system and place attachment in design studios.

When the findings of this study were compared to previous studies in literature, Moghisi, Mokhtari and Heidari (2015) found that place attachment leads people to have more positive feelings about the place of attachment, since they enjoy spending time there and feel more secure (2015). Parallel to their findings, the present study revealed that place attachment has a strong positive relationship with positive feelings. However, in the present study, there was no significant relationship of place attachment with the time spent in design studios (See Table 9 and Appendix C.1.).

Research suggests that students who build attachment to their university are less likely to drop out from school (Chow & Healey, 2008). Similarly, in the present study we found that students who feel attached to their studios were found to be less in favor of leaving their studios permanently.

Place attachment showed a positive correlation with frequency of attendance to class hours. It is not possible to understand which predicts the other in this study. However, it might be beneficial to examine this relationship since attendance is related with higher grades, in future studies.

Bogdan, Rioux and Negovan (2012) found that place attachment is not related to familiarity with place of attachment and age of the respondents. This study revealed parallel results with their findings. There was no significant relationship of place attachment to familiarity with place and age (as shown on the correlation table Appendix C.1.).

Hidalgo and Hernandez (2001) found that attachment to a place increases the sense of community and the bond between members of the community. Likewise, the present study revealed that sense of community show parallels with place attachment. Some of the respondents stated that “we buy supplies and materials together to use commonly in the studio” and “I share my belongings with the people in my studio”. Lastly, some stated that “I leave my belongings and materials in the studio, so my friends who work in the studio can use it”. These statements also reveal the sense of community among students.

Scannell and Gifford (2017) revealed that place attachment is highly related to sense of belonging items within a place and positive emotions towards the place of attachment. The findings of this study also showed similar results.

Correlations indicated that place attachment has strong relations with sense of belonging and positive feelings for a place.

Hill and Epps (2010) found that students feel more positive, when they come in to the classroom they evaluated better. Likewise, the present study showed parallel results with their study. According to the results of present study, evaluation and feelings towards a place are correlated with each other.

Gifford, Steg and Reser (2011) suggested that men are more territorial compared to women. However, correlation results indicated that there is no significant relationship between gender and territoriality. This may be because of the unbalanced gender distribution among respondents, the majority of the respondents and students of IAED and ARCH departments in Bilkent University were women, thus male students may not need to be territorial in their design studios.

The mean ratings of place attachment level showed no statistically significant difference between ARCH and IAED students. Although it was predicted that ARCH students would have higher levels of place attachment because their design studios are more exclusive to its users than IAED studios, since ARCH studios have electronical entry system. On the other hand, there was a significant difference in the mean ratings of territoriality between IAED and ARCH students. ARCH students showed higher ratings on territoriality.

Although it was not predicted at the beginning of the study, IAED students evaluated their studios more positively than ARCH students. This may be because of the time spent in design studios. As revealed in results, ARCH students spent much more time in their studios when compared to IAED students. Thus, they might feel tired of spending time in the same place for a long time. Also, it can be stated that spending too much time in design studio negatively affect general evaluation of physical qualities of a space. It can be because of people need to get away, when they spend a lot of time within a space, especially in working environments. This may suggest a need for a third place within design studios, since third places support recreation of its users. Thus, creating a third place, which enables users to rest or get away and retrieve their mental balance (Oldenburg & Brissett, 1982), would be beneficial for quality of time spent in design studios.

Also, the year of students showed difference in means of general evaluation ratings of respondents, as 2<sup>nd</sup> year students evaluating their design studios more positively than 3<sup>rd</sup> year students. This finding could be because people evaluate spaces more negatively as they spend so much time in there to feel tired of their design studios. This finding supports the suggestion to create a recreational area within design studios, like third places.

Despite the positive relationship of controlled access with territoriality, controlled access to design studios may be intimidating to its users as well as to people who do not use a controlled studio. It may be because when there is a controlled access to a design studio, people may think that that there is a

problem with security, so that the controlled access is required. Also, users of uncontrolled design studios may feel left-off, unprotected and insecure. Thus, it is crucial to find a balanced solution for access to design studios. For example, personal storages for each student may also be beneficial for design studios to provide sense of security of belongings in design studios without leading no one feel insecure or left-off (Gifford, 2014b). Also, it may be beneficial to create “soft edges” within design studios since it would contribute to active life in design studios as Gehl (1986) suggested for residential streets.

The present study examined the impact of controlled access on place attachment and territoriality in design studios. Since the results of the study showed no correlation between place attachment and having a controlled access in design studios, another balanced design decision for design studios would be beneficial.

## **CHAPTER 8**

### **CONCLUSION**

In the present thesis, the impact of controlled access on place attachment and territoriality and their relationship with each other was explored in a learning environment, design studios.

University is a place where people find opportunities for self-development. The environment on the campus has a great influence on students' academic and social performance and, eventually, the future society (Quingjiu & Maliki, 2013). In the present thesis, place attachment to design studios was examined. Since it has various psychological and physical impacts on individuals.

Attachment to university environment boosts the will of students for chasing goals (Kyle et al., 2004). It positively affects the students' self-efficacy and building better relationship with their peers (Xu et al., 2015). These are

beneficial factors that would improve the quality of studio life, which is the core of design education. Also, maintaining good communication and reducing the conflicts between peers are required for a healthy education in design studios. It is suggested by Brown et al. (2005) that these are provided by territoriality in working places.

Place attachment and territoriality in learning environments were studied previously in many aspects in different studies (Bogdan et al., 2012; Brown, 2009; Kyle et al., 2004; Moghisi et al., 2015; Qingjiu & Maliki, 2013; Rollero & Piccoli, 2010; Vinsel et al., 1980; Xu et al., 2015). These two concepts are studied separately previously. However, examining place attachment and territoriality together is important to understand them in learning environments in a more realistic way. In the present thesis, studying place attachment and territoriality together will fill this gap in literature with its method and results.

In the present study, we found a positive correlation between place attachment and territoriality in design studios. It was important to find this relationship for future studies and designs, since this may be an initial research and knowledge for literature. Also, place attachment has a positive relationship with general evaluation. Based on this information, it can be suggested that either people evaluate their place of attachment more positively or people feel more attached to a place where they evaluate better. This might be a question for future studies. The results also showed that place attachment has strong relationships with positive feelings, response to

case of leaving, sense of belonging to their studios and sense of community within design studios. Another finding revealed that there is an association between place attachment and frequency of attending classes in design studio. These factors are highly preferable for studio environments, since design studios are the core of design education and students learn most in their studios. Also, sense of belonging to a place and sense of community within a studio would be rewarding for design students because firstly, students learn from each other as well as their instructors and secondly, these factors are playing an important role for building a healthy atmosphere for design education and communication, which are the keys to learn in design studios (Demirbaş & Demirkan, 2003).

Additional findings on territoriality in the present thesis revealed that the having an electronical entrance system appears to be related to the level of territoriality of its users. This means that the more publicly used a place, the less territorial its users become. Territoriality has a strong association with sense of belonging and sense of community within studio. Although there was no significant difference between place attachment level regarding having an electronical entrance system, there was a correlation between territoriality and place attachment in design studios. This might be a lead to an indirect relationship between place attachment and having an electronical entrance system in design studios.

Another association is occurred between territoriality and time spent in studio beside the class hours. As mentioned above, design students mainly learn in

their studios even though there is no instructor in the room. As they spend time in their studios, they learn from each other and they can improve their own designs in this way.

Throughout this study, some limitations were noticed. Firstly, to evaluate their studios better, the students might have experienced other studios with different entry systems. In this way, the reason behind the difference between evaluations of IAED and ARCH students would be enlightened. Secondly, the gender distribution of respondents is unbalanced, since 73 % of the respondents were women and 27 % of the respondents were men. Although in this study there was no difference between two genders, previous works suggested that men are more territorial (Gifford et al., 2011). This might be occurred because men may show more territorial behavior against each other. In future studies, this may be taken into consideration. Also, for the further studies, whether place attachment triggers territoriality or territoriality triggers place attachment may be examined.

According to the results of this study, there is a positive relationship between having an electronical entry system to control access and territoriality to design studios. Although place attachment has no relationship with entrance system to studio, it may affect the level of sense of belonging and sense of community within the studio, which are preferable in design studios. These findings may guide the designers, environmental psychologists and executives of design departments to consider their choices or suggestions for entry systems to design studios from psychological aspect. Beside guiding

designers, findings of this study can be accepted as a preliminary data to fill the gap in literature by examining place attachment and territoriality together regarding the control of access to design studios. Furthermore, the findings of this study would be beneficial for environmental psychologists, educators and executives, especially in design departments of universities.

## REFERENCES

Altman, I. (1981). *The environment and social behavior: Privacy, personal space, territory, crowding*. New York: Irvington.

Asiyai, R. (2014). Students' Perception of The Condition of Their Classroom Physical Learning Environment and Its Impact on Their Learning and Motivation. *College Student Journal*, 48(4), 716.

Billig, M. (2006). Is My Home My Castle? Place Attachment, Risk Perception, and Religious Faith. *Environment and Behavior*, 38(2), 248-265.

Bogdan, C., Rioux, L., & Negovan, V. (2012). Place attachment, proactive coping and well-being in university environment. *Procedia - Social and Behavioral Sciences*, 33, 865-869.

Brown, G. (2009). Claiming a corner at work: Measuring employee territoriality in their workspaces. *Journal of Environmental Psychology*, 29(1), 44-52.

Brown, B., Perkins, D., & Brown, G. (2003). Place attachment in a revitalizing neighborhood: Individual and block levels of analysis. *Journal of Environmental Psychology*, 23, 259-271.

Brown, G., & Robinson, S. L. (2010). Hey that's mine! The nature of territorial behavior in organizations.

Brown, G., Lawrence, T. B., & Robinson, S. L. (2005). Territoriality in Organizations. *Academy of Management Review*, 30(3), 577-594.

Chow, K., & Healey, M. (2008). Place attachment and place identity: First-year undergraduates making the transition from home to university. *Journal of Environmental Psychology*, 28(4), 362-372.

Deasy, C. M., & Lasswell, T. E. (1985). *Designing places for people: A handbook on human behavior for architects, designers, and facility managers*. New York: Whitney Library of Design.

Demirbaş, O., & Demirkan, H. (2003). Focus on architectural design process through learning styles. *Design Studies*, 24(5), 437-456.

Demirkan, H. (2016). An inquiry into the learning-style and knowledge-building preferences of interior architecture students. *Design Studies*, 44, 28-51. doi:10.1016/j.destud.2015.12.009

Dinç, P. (2007). Spatial and Behavioral Variables That Affect "Emotional Attachment" of Users: A Multi-Dimensional Approach for Private Offices. *Gazi University Journal Of Science*, 20(2), 41-50.

Englebrecht, K. (2003). The Impact of Color on Learning, NeoCon

Fisher, K. (2001). Building better outcomes: the impact of school infrastructure on student outcomes and behavior, *Schooling Issues Digest*.

Gehl, J. (1986). "Soft edges" in residential streets. *Scandinavian Housing and Planning Research*, 3(2), 89-102. doi:10.1080/02815738608730092

Gifford, R., Steg, L. and Reser, J. P. (2011). Environmental Psychology. In *IAAP Handbook of Applied Psychology* (eds P. R. Martin, F. M. Cheung, M. C. Knowles, M. Kyrios, J. B. Overmier and J. M. Prieto).

Gifford, R. (2014a). Environmental Psychology Matters. *Annual Review of Psychology*, 65(1), 541-579.

Gifford, R. (2014b). *Environmental psychology principles and practice*. Colville, WA: Optimal Books.

Hernandez, B., Hidalgo, M., & Ruiz, C. (2014). Theoretical and Methodological Aspects of Research on Place Attachment. In *Place Attachment: Advances in Theory, Methods and Applications* (pp. 125-137). New York: Routledge.

Hidalgo, M. C. (2013). Operationalization of place attachment: A consensus proposal. *Estudios De Psicología*, 34(3), 251-259.

Hidalgo, M., & Hernández, B. (2001). Place Attachment: Conceptual And Empirical Questions. *Journal of Environmental Psychology*, 21(3), 273-281.

Hill, M. C. & Epps K. K. (2010). "The Impact of Physical Classroom Environment on Student Satisfaction and Student Evaluation of Teaching in the University Environment." *Academy of Educational Leadership Journal* 14.4 : 65-79.

Holahan, C. J. (1976). Environmental Change in a Psychiatric Setting. *Human Relations*, 29(2), 153-166.

Ibem, E., Alagbe, O., & Owoseni, A. (2017). A Study Of Students' Perception Of The Learning Environment: Case Study Of Department Of Architecture, Covenant University, Ota Ogun State. *INTED2017 Proceedings*.  
doi:10.21125/inted.2017.1455

Imamoğlu, V. (1981). İç Uzamlar İçin Genel Bir Değerlendirme Ölçeği. Research report No:7, Department of Building Science and Environmental Design, METU.

Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology*, 15(3), 169-182.

Kvan, T., & Jia, Y. (2005). Students' learning styles and their correlation with performance in architectural design studio. *Design Studies*, 26(1), 19-34.

Kyle, G., Graefe, A., & Manning, R. (2005). Testing the Dimensionality of Place Attachment in Recreational Settings. *Environment and Behavior*, 37(2), 153-177.

Kyle, G. T., Mowen, A. J., & Tarrant, M. (2004). Linking place preferences with place meaning: An examination of the relationship between place motivation and place attachment. *Journal of Environmental Psychology*, 24(4), 439-454.

Lang, J. (1987). *Creating Architectural Theory: The Role of the Behavioral Sciences in Environmental Design*. New York: Van Nostrand Reinhold.

Leung, S. (2011). A Comparison of Psychometric Properties and Normality in 4-, 5-, 6-, and 11-Point Likert Scales, *Journal of Social Service Research*, 37:4, 412-421.

Lewicka, M. (2011). Place attachment: How far have we come in the last 40 years? *Journal of Environmental Psychology*, 31(3), 207-230.

Moghisi, R., Mokhtari, S., & Heidari, A. A. (2015). Place Attachment in University Students. Case Study: Shiraz University. *Procedia - Social and Behavioral Sciences*, 170, 187-196.

Oldenburg, R., & Brissett, D. (1982). The third place. *Qualitative Sociology*, 5(4), 265-284.

Qingjiu, Sun, and Nor Zarifah Maliki. "Place Attachment and Place Identity: Undergraduate Students' Place Bonding on Campus." *Procedia - Social and Behavioral Sciences*, vol. 91, 2013, pp. 632–639.

Radcliffe, D. (2008). A pedagogy-space-technology (PST) framework for designing and evaluating learning places. In D. Radcliffe, W. Wilson, D. Powell, & B. Tibbetts (Eds.), *Learning spaces in higher education: Positive outcomes by design*. St Lucia, QLD: The University of Queensland.

Raymond, C. M., et al. "The Measurement of Place Attachment: Personal, Community, and Environmental Connections." *Journal of Environmental Psychology*, vol. 30, no. 4, 2010, pp. 422–434.

Rioux, L. (2006). Construction d'une échelle d'attachement au lieu de travail: une démarche exploratoire. *Canadian Journal Of Behavioural Science*, 38(4), 325-336.

Rioux, L., & Pignault, A. (2013). Workplace Attachment and Meaning of Work in a French Secondary School. *The Spanish Journal of Psychology*, 16, 1-14.

Rollero, C., & Piccoli, N. "Place Attachment, Identification and Environment Perception: An Empirical Study." *Journal of Environmental Psychology*, vol. 30, no. 2, 2010, pp. 198–205.

Sagun, A., Demirkan, H., & Goktepe, M. (2001). A Framework for the Design Studio in Web-Based Education. *International Journal of Art Design Education*, 20(3), 332-342. doi:10.1111/1468-5949.00282

Sanders, S., Bowie, S. L., & Bowie, Y. D. (2003). Lessons Learned on Forced Relocation of Older Adults: the impact of hurricane Andrew on health, mental health and social support of public housing residents. *Journal of Gerontological Social Work*, 40(4), 23-35.

Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*, 30(1), 1-10.

Scannell, L., & Gifford, R. (2017). The experienced psychological benefits of place attachment. *Journal of Environmental Psychology*, 51, 256-269.

Scrima, F. (2015). The convergent-discriminant validity of the Workplace Attachment Scale (WAS). *Journal of Environmental Psychology*, 43, 24-29.

Sommer, R., & Olsen, H. (1980). The Soft Classroom. *Environment and Behavior*, 12(1), 3-16.

Veltri, S., Banning, J.H., & Davis, T.G. (2006). The community college classroom environment: Student perceptions. *College Student Journal*, 40(3), 511-521.

Vinsel, A., Brown, B. B., Altman, I., & Foss, C. (1980). Privacy regulation, territorial displays, and effectiveness of individual functioning. *Journal of Personality and Social Psychology*, 39(6), 1104-1115.

Vorkinn, Marit, and Hanne Riese. "Environmental Concern in a Local Context." *Environment and Behavior*, vol. 33, no. 2, 2001, pp. 249–263.

Williams, D. R., & Vaske, J. J. (2003). The measurement of place attachment:  
Validity and generalizability of a psychometric approach. *Forest Science*, 49(6), 830–840.

Xu, M., Bakker, M. D., Strijker, D., & Wu, H. (2015). Effects of distance from home to campus on undergraduate place attachment and university experience in China. *Journal of Environmental Psychology*, 43, 95-104.

## **APPENDICES**

## **APPENDIX A**

### **Questionnaire (Turkish)**

Bu anket, İ. D. Bilkent Üniversitesi, İç Mimarlık ve Çevre Tasarımı Bölümü öğrencilerinden Hande Burcu Deniz tarafından, **tasarım stüdyolarında öğrenci-çevre ilişkisini incelemek** amacıyla hazırlanmıştır. Kişisel bilgileriniz ve cevaplarınız başka hiçbir amaçla kullanılmayacaktır. Katılım isteğe bağlıdır. Bu çalışmada doğru veya yanlış cevap yoktur. Önemli olan çalışma ortamınızla ilgili izlenimlerinizi bize içinizden geldiği gibi iletmenizdir. Bilgi için [burcu.deniz@bilkent.edu.tr](mailto:burcu.deniz@bilkent.edu.tr) adresinden ulaşabilirsiniz.

Bilgilendirmeyi okudum, verdiğim cevapların bahsedilen akademik çalışmada kullanılmasına onay veriyorum \_\_\_\_\_.

1. Yaşınız: \_\_\_\_\_

2. Cinsiyetiniz: Kadın  Erkek  Diğer

3. Kaç dönemdir bu stüdyoyu/çalışma masasını kullanıyorsunuz? \_\_\_\_\_ dönem

4. Kaç dönemdir bu binada (FF Binası) öğrenim görüyorsunuz? \_\_\_\_\_ dönem

2 numaralı sayfadaki soruları aşağıda verilen örnekteki gibi cevaplayınız.

**Örnek:** Ortak kullanım alanlarında temizlik sizin için **biraz önemliyse** biraz katılıyorum kolonundaki kutucuğu işaretleyiniz.

	Hiç katılmıyorum	Katılmıyorum	Pek katılmıyorum	Biraz katılıyorum	Katılıyorum	Kesinlikle katılıyorum
1. Ortak kullanım alanlarının temizliğine önem veririm				X		

### I. Stüdyo-Öğrenci Bağları

Örnekteki gibi cevaplayınız.

	Hiç katılmıyorum	Katılmıyorum	Pek katılmıyorum	Biraz katılıyorum	Katılıyorum	Kesinlikle katılıyorum
1. Bu stüdyoda kendimi güvende hissediyorum.						
2. Eşyalarımı bu stüdyoda bırakıp gitmek beni tedirgin etmez.						
3. Bu binada kendimce bağlarım olduğunu hissettiğim belli yerler vardır.						
4. Stüdyomdan vazgeçemem.						
5. Stüdyoda bulunan çalışma masamdan vazgeçemem.						
6. Stüdyoyu paylaştığım kişilerle ortak kullandığımız/aldığımız şeyler vardır.						
7. Stüdyoda stüdyo çalışmalarını dışında başka şeyler de yaparım. (Kitap okumak, resim yapmak, vb.)						
8. Çalışma masam ile bağlarım olduğunu hissediyorum.						
9. Çalışma masamın bana ait olduğunu belirten veya beni yansıtan işaretler vardır.						
10. Stüdyoda çalıştığım zamanlarda kullanmak üzere eşya/malzeme bırakırım.						
11. Bu stüdyoda bana anılarımı hatırlatan yerler vardır.						
12. Bu stüdyodaki çalışma masamda bana anılarımı hatırlatan şeyler vardır.						
13. Bu stüdyo kendimi rahat hissettiğim bir yerdir.						
14. Bu stüdyonun bana ait olduğunu hissediyorum.						
15. Bu çalışma masasının bana ait olduğunu hissediyorum.						
16. Stüdyomuzu değiştirmemem gerekseydi, çalışma masamı özlerdim.						
17. Başkalarının çalışma masamda çalışmasına izin veririm.						
18. Bu çalışma masası benim bir parçam gibidir.						
19. Daha önce iznim dışında çalışma masamı kullananlar oldu.						
20. Tatil sonrasında bu stüdyoya dönmek beni mutlu eder.						
21. Tatil sonrasında bu stüdyodaki çalışma masama dönmek beni mutlu eder.						
22. Bu stüdyoda kendimi evimde gibi hissederim.						
23. Bu stüdyodaki çalışma masamda kendimi evimde gibi hissederim.						
24. Çalışma masamın bana ait olduğunu herkes bilir.						
25. Bu stüdyo sevdiğim bir yerdir.						
26. Bu çalışma masası sevdiğim bir yerdir.						
27. Çalışma masamdan ayrılmam gerektiğinde bir başkasından yerimi tutmasını isterim.						
28. Stüdyoda, stüdyo ders saatleri dışında da vakit geçiririm.						

## II. Açık Uçlu Sorular

Verilen soruları kısaca cevaplayınız.

Stüdyoyu paylaştığınız kişilerle ortak olarak kullandığınız/satın aldığınız ürünler (varsa) nelerdir?
Stüdyonuza, stüdyo dışından birileri geldiğinde tepkiniz nasıl olur?
Çalışma masanızın size ait olduğunu gösteren işaretler varsa neler olduğunu (sticker, isim etiketi, vb.) yoksa neden kullanmadığınızı (ihtiyaç hissetmiyorum, kurallar gereği, vb.) yazınız.
Stüdyoda kullanmak üzere eşya bırakıyorsanız neler olduğunu yazınız (bardak, kesme tahtası, vb.).
Çalışma masanızda kimlerin çalışmasına izin verirsiniz? (Sadece arkadaşlarıma, herkese, vb.)
Başkasının çalışma masanızı haberiniz olmadan kullanmasına nasıl tepki verirsiniz?
Çalışma masanızın size ait olduğu biliniyorsa, bunu nasıl sağlıyorsunuz?
Bu stüdyoda, stüdyo saatleri dışında haftada yaklaşık olarak kaç saat geçiriyorsunuz?

### III. Stüdyo Genel Değerlendirmesi

4 numaralı sayfadaki soruları aşağıda verilen örnekteki gibi cevaplayınız.

**Örnek:** Oda sizin için biraz kirliyse, şekildedeki gibi, ortadan kirliye yakın olan kutucuğu işaretleyiniz.

	Çok temiz	Oldukça temiz	Biraz temiz	Biraz kirli	Oldukça kirli	Çok kirli
Temiz				X		Kirli

Bulduğunuz stüdyoyu aşağıdaki sıfat ikililerine göre işaretleyerek (X) değerlendiriniz.

Karışık, sıkış tepiş					Düzenli
Kötü planlanmış					İyi planlanmış
Ufacık					Kocaman
İtici					Davet edici
Kötü dengelenmiş					İyi dengelenmiş
Uyumsuz					Uyumlu
Küçük					Büyük
İçinde yaşanamaz					İçinde yaşanabilir
Dar					Geniş
Kötü düzenlenmiş					İyi düzenlenmiş
Kapalı					Açık
Tedirgin edici					Dinlendirici
Rahatsız					Rahat
Tıkış tıkış, sıkıntı verici					Ferah
Tenha					Kalabalık
Kötü ölçülendirilmiş					İyi ölçülendirilmiş
Kısıtlayıcı mekân					Özgür mekân

Stüdyo notlarınız genellikle hangi aralıkta?

A/A-

B+/B-

C+/C-

D/F

Stüdyo derslerine katılım sıklığım:

Sürekli

Çoğunlukla

Yalnızca zorunlu olduğunda

## **APPENDIX B**

### **Questionnaire (English)**

This survey is conducted by student of **Interior Architecture and Environmental Design Department**, Hande Burcu Deniz, to explore **student-environment relationship in design studios**. Your personal information and answers will not be used other than this study. Participation is voluntary. There is no right or wrong answer in this survey. Only the authenticity of answers matters. For more information: you can e-mail the conductor of this study via mail: **burcu.deniz@bilkent.edu.tr**.

I read the information above and I approve my answers to be used for academic purposes

\_\_\_\_\_.

1. Age: \_\_\_\_\_

2. Gender: Female  Male  Other

3. How many semesters you have been using this studio? \_\_\_\_\_ semesters

4. How many semesters you have been using this building (FF Building)? \_\_\_\_\_ semesters

Rate the statements on Page 2, as shown on the example.

**Example:** If cleanliness in common areas is **slightly important** to you, mark (X) on the **slightly agree** column.

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1. Cleanliness is important in common areas.				X		

### I. Studio-Student Relationship

Rate the statements as shown on the example.

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1. I feel safe in this studio.						
2. I feel comfortable when I leave my belongings in studio.						
3. There are certain places in this studio to which I am particularly attached.						
4. I would not give up on my studio.						
5. I would not give up on my workplace.						
6. We share/buy materials and objects with others in this studio.						
7. I do other things in the studio beside studio works (e.g. reading, painting, etc.)						
8. I am attached to my workplace.						
9. There are things that show the workplace is mine.						
10. I leave belongings to use afterwards.						
11. There are places in this studio which bring back memories.						
12. There are things in this workplace which bring back memories.						
13. This studio is somewhere I feel comfortable.						
14. I feel this studio belongs to me.						
15. I feel this workplace belongs to me.						
16. If the studio had to move, I would regret my current workplace.						
17. I let other people to use my workplace.						
18. This workplace is part of my inner-self.						
19. There were others that used my workplace without my permission.						
20. After a holiday, I am happy to go back to this studio.						
21. After a holiday, I am happy to go back to this workplace.						
22. I feel at home in this studio.						
23. I feel at home at this workplace.						
24. People know that this workplace belongs to me.						
25. This studio is somewhere I like.						
26. This workplace is somewhere I like.						
27. I ask people to hold my workplace when I am not here.						
28. I spend time in this studio beside class hours.						

## II. Open-ended Questions

Give brief answers to the questions below.

If you share/buy materials and objects with others in this studio, what are they?
How would you react when a stranger comes into your studio?
Please write down if you have a sign to show ownership of your workplace (such as sticker, name tag, etc.) if not why you do not (I do not feel necessity, regulations of studio, etc.).
Write down if you leave your belongings to use afterwards (e.g. mug, cutting board, etc.).
Whom do you let use your workplace? (Only friends, everyone, etc.)
How would you react if someone used your workplace without your permission?
If your ownership over your workplace, how do you ensure it?
How much time do you spend in your studio out of class hours?

### III. General Evaluation of Studio

Rate the statements on Page 4, as shown on the example.

**Example:** If the room look a little dirty to you, mark the box closer to middle on the 'dirty' side.

	Very clean	Pretty clean	A little clean		A little dirty	Pretty dirty	Very dirty	
Clean				X				Dirty

Evaluate the studio you work at regarding the adjective couples provided below, by marking (X)

Untidy										Tidy
Ill-planned										Well-planned
Tiny										Huge
Repellant										Welcoming
Ill-balanced										Well-balanced
Incompatible										Compatible
Small										Big
Uninhabitable										Inhabitable
Narrow										Wide
Ill-organized										Well-organized
Close										Open
Disturbing										Calming
Uncomfortable										Comfortable
Crammed										Spacious
Isolated										Crowded
Ill-proportioned										Well-proportioned
Limiting-space										Free-space

In which range are your grades generally fall into?

A/A-

B+/B-

C+/C-

D/F

Frequency of my attendance to studio class hours:

Always

Generally

When compulsory

## **APPENDIX C**

### **Tables**

**C.1. Table of Correlations between variables; department, familiarity to room, familiarity to building, grade, familiarity to room, familiarity to building, grade, frequency of attendance, time spent in studio out of class hours, place attachment, territoriality, general evaluation, positive feelings, response to case of leaving, sense of belonging and sense of community**

	Department	Familiarity to Room	Familiarity to Building	Grade	Attendance	Time spent in studio	Attachment	Territoriality	Evaluation	Feelings	Leaving	Belonging	Community
Department	1												
Familiarity to Room	-,348**	1											
Familiarity to Building	-,161*	,139	1										
Grade	,158	-,072	,072	1									
Attendance	,274**	-,084	-,029	,239**	1								
Time spent in studio	,410**	-,107	-,172*	-,034	,181*	1							
Attachment	,010	,118	-,059	,060	,231**	,059	1						
Territoriality	,375**	-,058	-,034	,115	,228**	,378*	,539**	1					
Evaluation	-,278**	,144	-,050	-,074	,203*	-,059	,297**	-,007	1				
Feelings	,020	,074	-,035	,070	,255**	,159	,645**	,468**	,410**	1			
Leaving	,084	,140	-,072	-,019	,240**	,135	,670**	,480**	,245**	,532**	1		
Belonging	,218**	,000	-,034	,061	,274**	,357**	,620**	,625**	,264**	,744**	,592**	1	
Community	,325**	,008	-,144	,038	,223**	,214**	,338**	,434**	,055	,250**	,374**	,433**	1

Correlation is significant at the 0.05 level (2-tailed).\*

Correlation is significant at the 0.01 level (2-tailed).\*\*

## C.2. Table of means regarding department of respondents

	Independent Samples Test									
	Levene's Test for Equality of Variances					t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper	95% Confidence Interval of the Difference
<b>Familiarity to Room</b>	Equal variances assumed	,224	,636	4,523	148	,000	,481	,106	,271	,691
	Equal variances not assumed			4,812	147,106	,000	,481	,100	,284	,679
<b>Grade</b>	Equal variances assumed	6,642	,011	-1,938	147	,055	-,198	,102	-,399	,004
	Equal variances not assumed			-1,976	139,778	,050	-,198	,100	-,395	,000
<b>Attendance</b>	Equal variances assumed	51,682	,000	-3,449	147	,001	-,308	,089	-,484	-,131
	Equal variances not assumed			-3,796	136,775	,000	-,308	,081	-,468	-,147
<b>Time spent in studio</b>	Equal variances assumed	11,854	,001	-5,468	148	,000	-5,2859	,9667	-7,1963	-3,3755
	Equal variances not assumed			-4,973	85,445	,000	-5,2859	1,0628	-7,3989	-3,1729
<b>Attachment</b>	Equal variances assumed	,002	,966	-,122	148	,903	-,02058	,16838	-,35332	,31216
	Equal variances not assumed			-,122	132,591	,903	-,02058	,16878	-,35443	,31327
<b>Territoriality</b>	Equal variances assumed	,040	,843	-4,918	148	,000	-,91742	,18656	-1,28608	-,54875
	Equal variances not assumed			-4,930	134,920	,000	-,91742	,18610	-1,28547	-,54936
<b>Evaluation</b>	Equal variances assumed	2,119	,148	3,515	148	,001	,50283	,14304	,22016	,78550
	Equal variances not assumed			3,657	147,187	,000	,50283	,13750	,23110	,77456
<b>Feelings</b>	Equal variances assumed	,041	,839	-,241	148	,810	-,04386	,18232	-,40415	,31643
	Equal variances not assumed			-,241	134,219	,810	-,04386	,18214	-,40410	,31637
<b>Leaving</b>	Equal variances assumed	1,112	,293	-1,025	148	,307	-,22930	,22376	-,67148	,21289
	Equal variances not assumed			-1,039	139,966	,301	-,22930	,22066	-,66555	,20695
<b>Belonging</b>	Equal variances assumed	,575	,449	-2,713	148	,007	-,55008	,20274	-,95071	-,14945
	Equal variances not assumed			-2,754	140,344	,007	-,55008	,19973	-,94495	-,15521
<b>Community</b>	Equal variances assumed	3,317	,071	-4,185	148	,000	-1,0958	,2618	-1,6132	-,5783
	Equal variances not assumed			-4,252	140,771	,000	-1,0958	,2577	-1,6052	-,5864



**C.4.** Tables of results of factor analysis conducted for territoriality items.

**Total Variance Explained**

<b>Comp.</b>	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
<b>1</b>	1,742	58,066	58,066	1,742	58,066
<b>2</b>	,677	22,563	80,630		
<b>3</b>	,581	19,370	100,000		

**C.5. Tables of results of factor analysis conducted for general evaluation items.**

Component	Total Variance Explained											
	Initial Eigenvalues				Extraction Sums of Squared Loadings				Rotation Sums of Squared Loadings			
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7,203	45,020	45,020	7,203	45,020	45,020	3,665	22,905	22,905	3,665	22,905	22,905
2	1,641	10,256	55,276	1,641	10,256	55,276	2,754	17,212	40,117	2,754	17,212	40,117
3	1,088	6,803	62,079	1,088	6,803	62,079	2,403	15,017	55,134	2,403	15,017	55,134
4	1,051	6,570	68,649	1,051	6,570	68,649	2,162	13,515	68,649	2,162	13,515	68,649
5	,811	5,069	73,718									
6	,695	4,344	78,062									
7	,665	4,154	82,216									
8	,534	3,337	85,554									
9	,466	2,915	88,469									
10	,366	2,286	90,755									
11	,332	2,073	92,828									
12	,277	1,731	94,559									
13	,268	1,674	96,232									
14	,226	1,414	97,646									
15	,209	1,309	98,955									
16	,167	1,045	100,000									

**C.6. Rotated component matrix of factor analysis for place attachment items**

	<b>Component</b>			
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Evaluation 1</b>	,759 <sup>1</sup>	,208	,063	,119
<b>Evaluation 11</b>	,725 <sup>1</sup>	-,089	,193	,315
<b>Evaluation 10</b>	,667 <sup>1</sup>	,489	,147	,199
<b>Evaluation 6</b>	,637 <sup>1</sup>	,393	,272	,095
<b>Evaluation 5</b>	,628 <sup>1</sup>	,549	,205	,103
<b>Evaluation 13</b>	,595 <sup>1</sup>	,232	,038	,449
<b>Evaluation 17</b>	,593 <sup>1</sup>	,298	,321	,119
<b>Evaluation 2</b>	,257	,829 <sup>2</sup>	,075	,127
<b>Evaluation 4</b>	,090	,771 <sup>2</sup>	,082	,396
<b>Evaluation 16</b>	,397	,602 <sup>2</sup>	,279	,224
<b>Evaluation 7</b>	,081	,141	,818 <sup>3</sup>	,235
<b>Evaluation 3</b>	,105	,150	,802 <sup>3</sup>	-,087
<b>Evaluation 9</b>	,400	,023	,779 <sup>3</sup>	,128
<b>Evaluation 12</b>	,106	,210	-,046	,807 <sup>4</sup>
<b>Evaluation 8</b>	,275	,152	,195	,746 <sup>4</sup>
<b>Evaluation 14</b>	,342	,333	,264	,513 <sup>4</sup>

**C.7.** Tables of reliability test conducted for place attachment items.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,822	,825	8

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
<b>Q. 3</b>	17,968	56,230	,327	,194	,830
<b>Q. 8</b>	19,110	52,118	,519	,324	,805
<b>Q. 11</b>	18,308	48,510	,591	,542	,795
<b>Q. 12</b>	19,028	47,610	,708	,653	,777
<b>Q. 16</b>	19,708	53,358	,546	,411	,802
<b>Q. 18</b>	19,561	52,580	,639	,521	,792
<b>Q. 20</b>	19,191	51,247	,521	,558	,805
<b>Q. 21</b>	19,408	52,011	,529	,590	,804

**C.8.** Tables of reliability test conducted for territoriality items.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,637	,638	3

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
<b>Q. 9</b>	7,000	7,034	,481	,232	,494
<b>Q. 10</b>	5,373	7,068	,416	,176	,581
<b>Q. 24</b>	6,467	6,735	,444	,204	,543

**C.9.** Tables of reliability test conducted for general evaluation items.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,916	,915	16

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
<b>Bin. 1</b>	57,649	181,325	,611	,476	,911
<b>Bin. 2</b>	57,592	181,228	,609	,590	,911
<b>Bin. 3</b>	56,866	191,502	,372	,459	,918
<b>Bin. 4</b>	57,619	182,134	,588	,598	,912
<b>Bin. 5</b>	57,495	176,760	,760	,654	,907
<b>Bin. 6</b>	57,379	178,528	,701	,626	,909
<b>Bin. 7</b>	56,706	188,601	,489	,544	,915
<b>Bin. 8</b>	57,239	181,511	,579	,522	,912
<b>Bin. 9</b>	56,826	184,167	,577	,613	,912
<b>Bin. 10</b>	57,532	175,062	,774	,731	,906
<b>Bin. 11</b>	57,192	182,203	,569	,520	,913
<b>Bin. 12</b>	57,666	191,108	,431	,428	,916
<b>Bin. 13</b>	57,528	179,475	,643	,615	,910
<b>Bin. 14</b>	57,219	181,214	,649	,548	,910
<b>Bin. 15</b>	57,372	177,506	,712	,671	,908
<b>Bin. 16</b>	57,406	180,581	,655	,610	,910
<b>Bin. 17</b>	57,649	181,325	,611	,476	,911

## **APPENDIX D**

### **Photos of Design Studios**



**General look of design studio FFZ 05 (ARCH Studio)**



**General look of design studio FF 308 (IAED Studio)**