

RELATIONSHIPS BETWEEN DENSITY, CROWDING, PRIVACY AND
DORMITORY SATISFACTION: THE CASE OF BILKENT UNIVERSITY
DORMITORIES



A Master's Thesis

by
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Ankara
July 2016

To my wonderful parents; Özlem Kıvanç, Aydın Kıvanç, Dilay Kıvanç

&

Andaç Beder



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

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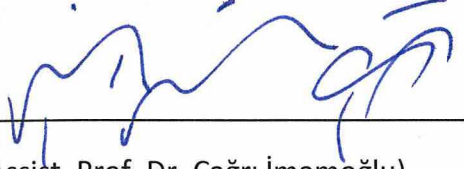
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İHSAN DOĞRAMACI BİLKENT UNIVERSITY
ANKARA

July, 2016

I certify that I have read this thesis and have found that it 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.



(Assist. Prof. Dr. Çağrı İmamoğlu)
Supervisor

I certify that I have read this thesis and have found that it 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

RELATIONSHIPS BETWEEN DENSITY, CROWDING, PRIVACY AND DORMITORY SATISFACTION: THE CASE OF BILKENT UNIVERSITY DORMITORIES

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Many students move to different cities for their university education. This brings formidable experiences to those who are separated from their family. Living in a dormitory teaches them to live, interact and coordinate with other students in common spaces. This study focuses on the relationship of satisfaction with crowding and privacy. A questionnaire that inquired about the satisfaction of students with respect to their dormitories was conducted with 200 undergraduate students who lived in Bilkent University Dormitories. Factor analysis, correlation, t-tests, chi-square tests, and anova were used to test the hypotheses. In line with the literature, the results suggest that general satisfaction level, dormitory satisfaction level, dormitory room satisfaction level and satisfaction of school level show positive and strong correlations with each other. Men seem to have a higher

general satisfaction level but less privacy compared to women in similar conditions.

Individuals who live with more people per meter square in a dormitory room feel more crowding than the others. Amongst different genders that lived in the same room, women perceived and qualified their room as smaller compared to men's perception. Lastly, individuals who qualify their dormitory room as small seemed to feel more crowding compared to others.

Keywords: Crowding, Density, Dormitory, Privacy, Satisfaction

ÖZET

YOĞUNLUK, KALABALIKLIK, MAHREMİYET VE YURT TATMİNİNİN BİRBİRİ ARASINDAKİ İLİŞKİLERİ: BİLKENT ÜNİVERSİTESİ YURTLARI ALAN ÇALIŞMASI

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Birçok öğrenci üniversite eğitimi için ailelerinden ayrılarak başka şehirlere taşınmaktadır. Yurtta yaşamak, öğrencilere ortak alanlarda diğer öğrencilerle yaşamayı, etkileşime girmeyi ve koordinasyonu öğretiyor. Bu çalışma, üniversite kampüs yurtlarında memnuniyet algısının kalabalıklık hissi ve mahremiyet ile ilişkisini ele almaktadır. Öğrencilerin yurt memnuniyetini etkileyen faktörleri sorgulayan sorulardan oluşan anket araştırması, Bilkent Üniversitesi yurtlarında kalan 200 lisans öğrencinin katılımıyla yapılmıştır. Faktör analizi, korelasyon, t-test, chi-square test ve anova yöntemleri hipotezleri test etmek için kullanılmıştır. Literatür ile uyumlu olarak katılımcıların genel tatmin seviyesi, yurt tatmin seviyesi, yurt odası tatmin seviyesi ve okul tatmin seviyesi birbirleriyle pozitif ve güçlü

korelasyonlar göstermiştir. Erkeklerin kadınlara göre daha yüksek memnuniyet seviyesine sahip olduğu ancak erkeklerin mahremiyet algısının kadınlara göre daha düşük olduğu görülmektedir. Yurt odasında aynı metrekarede daha çok kişiyle kalan öğrencilerin daha fazla kalabalıklık hissi yaşadığı görülmüştür. Aynı metrekaredeki odalarda yaşayan kadınlar odalarını erkeklere oranla odalarını daha küçük olarak nitelendirmişlerdir. Son olarak, yurt odasını küçük olarak nitelendiren öğrencilerin daha fazla kalabalıklık hissi yaşadığı görülmüştür.

Anahtar Kelimeler: Kalabalıklık, Mahremiyet, Tatmin, Yoğunluk, Yurt

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CHAPTER I

INTRODUCTION

Evaluation and factors of daily life satisfaction is an important topic that has been extensively studied. Life satisfaction is related to a number of factors like occupation, well-being, schooling, human connections, and fundamental physical necessities like clothing, food, housing and others (Hofstede, Maslow, Lotfi & Solaimani, as cited in Najib, Yusof & Zulkifli, 2011). Additionally, satisfaction with accommodation and the district, client and customer satisfaction, ethical satisfaction and job satisfaction are linked to life satisfaction (Najib et al., 2011).

Satisfaction could be more significant in the case of continual and sequential residence. Home is the best kind of environment in the long-term (Kaya & Erkip, 2001). To realize the relationship between the environment and people, general areas other than home, like rehabilitation and nursing centers for the older adult, and hostels are other significant types of environment (Kaya & Erkip, 2001). Dormitories have been examined recently related to residential satisfaction.

A significant number of people move to cities far from their hometowns for university education. For newly accepted university students, being far from their families for a long period of time, while living in dorms, is an important experience. This recently created style of life is an opportunity to learn how to share common space and facilities following congruence and compatibility with other roommates and dorm-mates, while earning the skills of independent living and use the common space in adaptive and collaborative way (Turley & Wodtke, 2010).

The definition of the dormitory is a building for students on campus which provides the possibility of stay if they do not have such an option anywhere else (Willoughby, Carroll, Marshall & Clark, 2009). Other terms used for dormitories are: university housing (Bland & Schoenauer, 1966), catered halls (Price, Matzdorf, Smith & Agahi et al., 2003), hostel (Sohail, Rajadurai & Rahman, 2003; Dahlan, Jones, Alexander, Salleh & Alias, 2009; Khozaei, Hassan & Ayub, 2010), halls of residence (Amole, 2005) and student house (Najib et al., 2011).

Nowadays, the demand for modern dormitory facilities in higher education environments has risen (Najib & Yusof, 2009; Khozaei et al., 2010). Modern on-campus facilities to meet the needs of accommodation for students seem important (Susilawati, 2001; Hassanain, 2008; Najib & Yusof, 2010). Studies done by Olujimi & Bello (2009) found that study halls, kitchens, personal bathrooms and public spaces constitute the fundamental needs in a dorm. Susilawati (2001) and Khozaei et al.

(2010) define dormitories as buildings with several rooms, including numerous beds. Based on this description, a dormitory consists of living and sleeping quarters usually without a personal bathroom, providing accommodation.

It seems there is a lack of investigative inquiry into accommodation satisfaction of students with university dormitories, notwithstanding research questioning the factors influencing housing and neighborhood satisfaction (Amole, 2009). Regarding university dormitories, studies that focus critically on satisfaction levels of students have parts of concentration which are different, considering the effects of the physical features, psychological characteristics and management specifications. According to the major number of studies, a direct co-relation between the levels of satisfaction and the dorm environment is shown. In essence, a higher level of satisfaction has been reached when the environment meets the expectations of individuals. Contrary, inconformity between accommodation necessities and aspirations results to dissatisfaction (Mohit, Ibrahim & Rashid, 2010). Consequently, it can be concluded that factor determination of students' satisfaction could lead universities to make changes aiming the increase of satisfaction.

1.1. Aim of the Study

There is lack of studies on satisfaction factors with dormitory, particularly in Turkey. Hereby, this research tries to fill this gap in the literature. The initial aim of this study was to define the most significant factors that predict the satisfaction level of undergraduate students with the dorm they are living in. Thus, the present study attempts to recognize the major substantial factors that predict the satisfaction

with accommodation in dormitories of Bilkent University. In this research, the aim of the study consist of understanding the relationship between density and crowding in rooms with different densities, the relationship between density and crowding in rooms far away from semi-private areas, comparing demographic differences and at the end comparing the length of stay.

1.2. Structure of the thesis

This thesis consists of seven chapters, which the first chapter is introduction. How living on-campus is important and residential aspects of dormitory are being explained briefly. Besides, the aim of the study and the structure of the thesis are given respectively in this chapter.

The literature review is given in the second and third chapters. These two chapters are designed to present information about the concepts that will be used throughout the study. Important studies and fluencies on residential satisfaction from the perspectives of students are briefly explained in the second chapter. Definitions of privacy, crowding and density are mentioned in third chapter.

The fourth chapter concentrates on the design of the study. Besides the setting of the study, hypotheses and research questions are expressed in this chapter. Afterwards, the methodology is explained. Findings for both stages and questionnaire results are presented along with the data obtained in the fifth

chapter. The findings of this research are explained and evaluated in the discussion part which is the sixth chapter. Thereafter, data from the previous studies found in literature are compared to findings of the study in the seventh chapter. Finally, in the conclusion the entire study is evaluated and limitations of the research are given in this chapter.



CHAPTER II

CROWDING AND PRIVACY

With global urbanization and population growth, a considerable percentage of world population live in densely populated urban regions at the end of this century (Ehrlich & Ehrilch, 1970). Until recently, the terms crowding and density were not principally described, nor were they well distinguished from each other; knowing that recent studies regarded to the impacts of population concentration, these terms were considered interchangeable. Crowding and privacy are two major aspects in design of dormitory. High grades of potential crowding and privacy-control loss of is estimated based on amount of information that cloud be processed individually through environmental hints, while experiencing the perception of density and crowding (Rapoport, 1977).

The terms mentioned above make large diversities in satisfaction level of residents. An environment behavior relation is based on the conception of privacy. This concept is characterized as access to the self and others community by selective control (Altman, 1976). Privacy is described as “the claim of individuals, groups, or

institutions to determine for themselves when, how, and to what extent information about them is communicated to others" by Westin (1970:7).

Considering this as a personal issue of needs, Schmidt (1977) defines the sense of privacy perception, as if any individual feels that she/he controls information about herself/himself. There are four basic types of privacy according to Westin (1970); Solitude, intimacy, anonymity, and reserve. Solitude is being alone and free from the eyes of others and it can be considered as a type of privacy. Indeed, solitude is the state of privacy that could be achieved by being alone in a room (Schmidt, 1977). Whilst by couples or groups who wish to establish a much private personal relationship, intimacy is sought then. In this case, the couple or group would intend to make themselves separate from all others, trying to achieve this state not in the group. An opportunity to move around in public without being recognized or being the matter of attention is provided to person by anonymity, as another state of privacy (Demirbaş & Demirkan, 2000). According to Westin's analysis (1970), reserve is the final type of privacy being defined. Reserve suggested by Westin (1970), requires the inception of psychological barriers against interference (Altman, 1976). Even in the most sincere relationship each individual might prefer not to reveal a particular countenance or characteristic of herself/himself to the others, inasmuch as reserve state of privacy necessitates this subject matter (Schmidt, 1977).

Generally, there is an optimum desired amount of privacy at a given time and condition, so privacy is an optimum proceeding (Natheer & Anwar, 2002). Altman

(1975) considers crowding and isolation as non-optimal privacy states. Further than that, according to his definition “causing a person or group to have more interaction with others than is desired, crowding occurs when privacy mechanism fail to function successfully” (p. 52). In general, individuals who perceive greater crowding are satisfied less with their privacy, control over their room, and are more likely to plan to not continue their roommate relationship (Schmidt, 1977). The influence of crowding on satisfaction with roommate(s) is less clear. Students residing in triple dormitory rooms were less satisfied with their roommates than counterparts of those in doubles, based on Baron, Mandel, Adams and Griffen (1976) report. On the other hand, on a different perspective, Eoyang (1974) found out that rating the space where students live is affected by crowding significantly, creating fluctuant results that needs to be studied further for explanations.

Two individuals who share a room together both have two criteria that they need to satisfy in order to be successful roommates. These demands are results of living in a dormitory or other housing settings that include such things as sharing responsibility, respect for privacy, etc. The process of friendship needs a different set of situations such as empathy and support. Some of the demands of these two roles and responsibilities might be naturally contrasting.

In general terms, density refers to the number of persons or households as social units per unit of space (Huang, 1982). One of the most widely definition was by Huang (1982:35)

Crowding is a phenomenon of intensive and uncontrollable stimulation resulting from social and/or physical stressors, of less behavioral freedom or control over a spatial and/or socially constrained environment, or of lack of affordance structures in the physical and/or social environments to serve occupants' behavioral needs.

The difference of between density and crowding on the basis of physical psychology discrimination is recognized by Stokols (as cited in Huang, 1982). Although density is considered as a physical situation of constrained space; crowding is an instinctive and experiential process as psychological state. According to Huang "The physical variable space, plus the intervening psychological constructs of personal control, information capacities, goals, roles, and concern about threat may interact to produce stress in humans"(1982, p.35). Briefly, Schmidt, Goldman and Feimer (1979) claim that; crowding is dependent on a lack of behavioral freedom and control, that is accelerated by redundant social and visual premonition, and that is mediated by a number of individual, connotative, and time indicators which are not mutually exclusive.

2.1. Social Density

Gifford (1987) states that increment of social density gives rise to sense of being crowded to be increased in residential environments. Social factors in relation with

sense of crowding may emanate from two sources: 1. one of the high density states may result in incompatible cases, such as proximity, and 2. High density may be accompanied by incompatible social conditions non-aligned of the space supply, e.g., social atmosphere and the nature of setting (Huang, 1982). In addition to this, crowding is not defined simply as consequence of space shortage according to Desor (1972) but it is a reaction to excessive social stimulation. Jain (1987) claims that when social contact is heightened, the same amount of supplies must be distributed to large number of people, so more physical interference is encountered, and as sequel the sense of control is reduced. Based Rohe and Patterson (1974), when social density is higher than the desired level, social outcomes are basically more negative, such as extra aggression and less cooperation. Besides, more social withdrawal is observed in this condition (Sundstrom, 1975). Dormitory studies at the Stony Brook Campus (Baum, Herpin & Valins, 1975; Valins & Baum, 1973) investigating the responses of students in dorms with similar densities (persons per floor) while comparing between habitants living in traditional corridor-style dormitory and those residing in suite-style dormitory are relevant to the current study's purposes; corridor residents felt more crowded, perceived themselves as having too much unwanted proximity to others, and had a tendency to search minimum involving in social situations. As stated by Baum and Paulus (1987), students experience crowding while confronted with unwanted repetitious contact with their neighbors and as a consequence they avoid interaction with unfamiliar people even outside of their housing environments. According to Valins and Baum (1973) "corridor design dormitories can be considered overloaded social environments: the interior architecture of these

dormitories requires many students to share common facilities; students frequently reported meeting people when interaction is not wanted" (p. 437). Walden et al. (1981) examined the impacts of social density in a dorm room as well. Students felt more crowded, when three students had to share a bedroom designed for two. The studies reveal that privacy, feeling of crowding and control over space as important indicators of satisfaction level in student dormitories. Further than social density, physical and social factors influence the spatial perceptions of students and the sense of being crowded in dormitory buildings (Kaya & Erkip, 2001).

2.2. Physical Factors

Physical factors consist of room size, view from room window, height of floor, design specifications such as long or short hallways/suites, bathroom location and so on. Students residing in rooms located along double-loaded central hallways and sharing a bath and a lounge with all other students on the same floor (large size group) reported more dense and unwanted interactions, less satisfaction, more desire to avoid neighbors and more difficulty in regulating social contacts than did students living in dormitory which dispersed people in suites each containing its own bath and lounge shared with 4-6 persons (small size group), when physical density was held constant in dorm settings (Baum & Valins, 1977). Studies related to high-rise student dormitories claim that residents experience more crowding and stress, when the design characteristics involve long corridors as opposed to short corridors or suites (Baum et al., 1979). As a consequence, since there are less space in short corridors/suite dormitories, it was used often by smaller number of people

and small groups were less likely to be formed. As mentioned previously, long corridors are providing great chance to form less personal control, reduced cooperativeness, major competitiveness and greater social withdrawal. In addition, Huang (1982) state that students residing in dorm rooms located in long corridors reported more crowding than those in short corridors. Other pertinent studies also depict a high demand among students to have a greater level of privacy in their halls of dormitory. For instance, a study performed by Balogh, Grimm & Hardy's (2005) determines a result of more privacy demand concluded that "construction and renovation were focused mainly on building apartments and suites rather than traditional residence halls" (p. 55) when investigating the recent trends in housing construction and renovation of educational institutes involving 284 participants. Besides, living in a high-rise student dormitory may navigate to a greater sense of crowding and other attitudes negatively such as low perceived control, safety, privacy and satisfaction with building, beside the poor quality of interactions with other students (McCarthy & Saegert, as cited in Huang, 1982). A large number of studies investigating the effects on perceived crowding and immediate responses realized that groups in smaller rooms reported high level of crowdedness, confinement, discomfort, and/or less friendliness than did similar groups in greater rooms (Baum & Koman, 1976; Rohe & Patterson, 1974; Stokols, Rall, Pinner & Schopler, 1973; and Sundstrom, 1975). Schiffenbauer, Brown, Perry, Shulack and Zanzola (1977) discovered that light colored or well-lit rooms had more chance to be perceived as larger than comparable darker rooms and the ratings of crowding were lower in lighter rooms as well. Thus, crowding seems to be inversely proportional to the brightness of a room. Mandel, Baron and Fisher (1980) signifies

that rooms receiving more sunlight in dormitories perceive as less crowded. It is suggested that by brightening a room with light colors or graphic designs on walls, crowding may be reduced. Also it is thought that, rooms that look at neighboring buildings were perceived to have less control over the place and privacy protection, while rooms that look at node were perceived to have more control over the place and more privacy protection base on Natheer and Anwar(2002). According to Tennessen and Cimprich (1995), on-campus dormitory students had better performance on attentional measures with more natural views from their windows than those with less natural seeing. Moreover, Kaya & Erkip (2001) found that students of the highest floor of building were more satisfied with their dorm rooms than students of the lowest floor. The reason is, resulted from the perception of darkness, narrowness, noisiness and frequent usage of hallways which are regarded as negative physical aspects of the room. Knowing that the noise level on the ground floor was louder than on the fifth floor. In spite of this, Huang (1982) indicated that there was no considerable variation in floor crowding between higher and lower floor students; however the obtained view from window was subsequently related to floor height. The purpose of doing this is, it is assumed that in dormitories with long corridors, distance to community areas (such as bathrooms) might affect the privacy-crowding relationship and correspondingly increasing general satisfaction related to the dormitory.

2.3. Social Factors

Social factors are based on social relationships. They include interactions with other dorm-mates and roommate(s), activities taking place, frequency of confronting strangers, sharing of bedrooms, and individual characteristics such as sex, family type, and backgrounds related to personality, including how many people sharing a bedroom at one's home (Kaya & Erkip, 2001; Huang, 1982). People perceive the environment in various ways based on personal/cultural differences in environmental understanding of housing. Since they have diverse demands of individual space and zone, they signify their needs and priorities distinctly (Haltt, Sommer, as cited in Huang, 1982). Definition of standards and domains like space and density differs with them (Lee, 1968).

A few studies measured the sense of crowding or discomfort regarding varied gender and room density. Consequently, it is found that in same-sex groups men represented major discomfort in rooms with high density than did women, according to several works (Baum & Koman, 1976). In relation to this, women seem to hand the stress due to density better than men (Gifford, 1987). However, Saegert (1975) claim the opposite results for reports of anxiety. Furthermore Kaya & Erkip (2001) state that the women students perceived their rooms as smaller compared to what men students. Besides, men residing in dormitories felt their rooms more private than women students did, since women spend more time in their rooms, and they may responded to physical advantages and disadvantages of their rooms more sensitively (Mandel et al., 1980). In contrast, no gender differences in

crowding, discomfort, or task performance as a function of room density (Stokols et al., 1973; Sundstrom, as cited in Huang, 1982). The overall tendency in age data represents that young individuals are more susceptible to crowding than adults, and age seems to be related to spatial needs (Aiello & Aiello, Evans, as cited in Huang, 1982).

Studies examining the influence of personal background on crowding indicates that individuals with a experience of tense social interaction are less likely to confront crowded spaces at a distinct grade of density than individuals with a experience of comparative isolation, according to the personal adaptation concept as another related assumption (Huang, 1982). Marshall (1972) investigating the individual's childhood accomodation conditions focusing on relationship between density and crowding beside the privacy priorities, realized that feeling of crowding sense during one's childhood is not based on only that age's perception factors of density like to own a personal room, living in a single-family housing, number of siblings.

In addition, a field study done by Cozby (1973) defined that people who lived their childhood in high level density dwellings had greater individual space zones.

Another approach based on the concept of human adaptation corresponds one's toleration for high grade of density to the duration of time which an individual has been exposed to. In conjunction with this, students of a dorm housing with long-corridors were more ambitious and conscious after one and three weeks of housing

compared to the counterparts living in a dorm with short-corridors; by the end of seven weeks, nonetheless, they had become more diffident and less pertinent, and exposed indications of despair and discouragement (Baum, Aiello & Calesnick, 1978).

This chapter covered density, crowding and privacy and their relationships with each other. This examination was focused on the design influences of the campus dormitory. The next chapter talks about physical and social factors that effect the dormitory satisfaction.

CHAPTER III

DORMITORY SATISFACTION

Satisfaction is described as a factual and expectation gap approach of customer necessities (Galster, 1987). Satisfaction is considered as significant factor of the quality of life, welfare and happiness (Mccrea, Stimson & Western, 2005).

Accommodational and environmental impacts on satisfaction of students is becoming a favorite topic of study, and a popular subject for universities because a large number of universities provide students opportunities to live on campus.

Studies show that the optimal conditions of accommodation and facilities on campus of universities have a positive impact on entire students' registration (Bekurs, 2007). In many cases, it is believed that life on campus academically and desirably influences students to get positive performance (Araujo & Murray, 2010; Astin, 1984; Chickering, 1971; Turley & Wodtke, 2010). The reason is, on campus life at the university enables students to get various chances. For instance, they do not spend extra time for transportation, they can also have a lot of reading rooms and study together with another dorm-mates that have taken the same course.

Some researchers argue that students could improve their academic performance if they have convenient accommodation conditions in their dormitory (Amole, 2005; Hassanain, 2008). Melnikas (1998) and Sitar and Krajnc (2008) underline that to assess the quality and reintegrate of dormitory is essential to increase student standards of living as well as modify any deficiency in the facilities. Therefore, occupant satisfaction must be determined to predict dormitory needs. Following the academic achievement, on-campus dormitory provides housing to many students every year. The quality of such housing and its environment are necessary to well-being level of students. In a larger scale, the significance of dormitory specifications to increase the well-being level has been well certified. There have been a large number of studies that researched the impacts of on-campus accommodation of students (Bland & Schoenauer, 1966; Baum & Davis, 1980; Kaya & Erkip, 2001; Natheer & Anwar, 2002; Amole, 2009). The studies' conclusions show that accommodation in university campuses generally offers a positive effect on students. Khozaei et al. (2010) cited in that among the positive impacts are: more engagement with the university environment (Astin 1973, 1993), greater levels of permanence and higher rates of graduation (Astin, 1973; Pascarella & Terenzini, 1991; Tinto, 1993; Chickering 1974), high level satisfaction with college experiences (Blimling, 1993), a greater understanding of personal advancement (Schroeder & Mable, 1994), better social interchange (Chickering, 1974; Ballou, Reavill, & Schultz, 1995), much more interaction with faculty and greater possibility of being involved in student government (Astin, 1984), and higher educational expectations and better academic performance (Moos & Lee 1979).

3.1. Satisfaction Necessities in Dormitory

Satisfaction necessities of students depend on both the physical and social environment. The correlation between satisfaction with these two factors is explained by the social reasons that may define the differences in grouping of particular physical characteristics (Botha, Snowball, Klerk & Radloff, 2015). As Amole (2009) expresses, satisfaction with student accommodation is a significant index in assessing the quality of dormitory environments.

Physical attributes have been barely investigated in most studies related to dormitory satisfaction. The morphological configuration is a significant physical characteristic, which is not frequently handled in examining satisfaction. This is a considerable side of the design of buildings. To indicate that the morphological configuration of the dormitory remarkably influences the satisfaction level, there is enough certification (Gifford, 1997; Davis & Roizen, Hourihan, as cited in Amole, 2009). Kaya and Erkip's research (2001) on student lodging setting at Bilkent University is among the works that research the effect of physical aspects of on-campus dormitory on students' satisfaction. The study specifies that students living on the highest floor of the dorm building acquired the perception of possessing larger rooms and found them to a lesser degree of crowdedness in comparison to those on the lowest floor. The study brings forth that students' feeling of their privacy led to an increase in the satisfaction level of students with their living circumstance. For instance, a conclusion of "residents of low-rise dorm buildings were considerably more satisfied and started more connections based on dormitory

setting than residents of a mega-dorm housing” came out of a study on 120 freshmen students in on-campus dormitories which was conducted. In a similar way, the high-rise dormitories' design also leaves an effective impact on students' level of satisfaction based on Baum, Davis and Valins (1979). Kaya and Erkip (2001) claims that habitants settling in dorms with lengthy corridors are attached mostly by an increased level of competitiveness, decreased cooperativeness, social withdrawal and lower personal control. Correspondingly, Karlin, Rosen and Epstein's study (1979) notes that size of dormitory room could actually affect satisfaction level of students. For example, their work figured out that students living in dormitory rooms shared by three students were less satisfied and also less happy with their housing conditions compared with students who lived in double sharing rooms.

Najib and Yusof (2010) point out that dormitory satisfaction of student may depend on high-quality equipment, positive roommate communications, intimate floor communities and quiet study environments in their housing environments. Furthermore, Kaya and Erkip (2001) claim that satisfaction with student dormitory is based on possessing larger and brighter rooms with more quietness and less stress in the living space, whilst Amole (2005) argues that students determine dormitory satisfaction based on crowding and privacy in their dormitory rooms.

Dormitory satisfaction is observed as very helpful indicator in the assessing of dormitory; since it implies the overall levels of success, evaluates the affective and

cognitive responses of users, expresses the monotonous dimensions of housing environments and predicts reactions to forthcoming environments. It also aids in defining the contribution of different criterion to satisfaction, the differences between various types of factors and the relationships between different aspects of the dormitory environment.

Primarily, dormitories are the main form of accommodation for university students who are in a transient state of life. There is a limited research on this group of users regarding to housing (Gifford, 1997). In the second place, the context of students' dormitory is commonly the campus ambience rather than the urban setting. Therefore, students' residency includes the particular type of dormitory with a specific category of users which needs to be investigated.

An important issue in major part of the models of dormitory satisfaction is how to evaluate the dormitory attributes mentioned previously. Two categories of evaluations are surveyed in the literature; objective and subjective measures of dormitory features (Francescato, 2002; Weidemann & Anderson, 1985). Objective measures mention the actual investigations, such as the presence, quantities or the lack of features, while subjective investigations refer to perceptions, emotions, outlooks and intentions considering the housing characteristics. The objective measures of the dormitory features have been realized to be insufficient predictors than the subjective ones (Francescato, Aragonés & Garling, 1989; Weidemann & Anderson, 1985).

3.2. Individual Differences

Diverse features related to the structure of populations that impress housing satisfaction have also been surveyed in the literature, although the concentration has been on adults. These features comprise gender, age, race, ethnicity, residency duration and socio-economic condition (Gifford, 1997). For example, men and women look after to have various perceptions about the 'crowding is a feeling' and consequently have variant confrontation tactics to crowded situations (Walden, Nelson & Smith, 1981). AlKandari (2007) pursued a case study on students' sense of the dormitory environment. The study clarified how students' perceptions are influenced by sex, nationality and length of living on dormitory. The study shows that how women and men reactions were different in the mode they comprehend their dormitory environment. In general, women were pleased with their dormitory environment more than men. In any case, there was no outstanding diversity in responses between students of various nationalities. Similar, performed a study among 855 students concluding that the year of study was a significant factor in relation to both satisfaction with, and perceptions of the residence experience (Allen & Maimone, as cited in Khozaei et al., 2010). Particularly, junior students felt themselves as "less involved" and "less a member of the community" than did their senior counterparts (Rodger and Johnson, 2005). Meanwhile, as mentioned previously, not much record is available on residential satisfaction for youths. It is not certain whether the attributes used to predict adult housing satisfaction would also work to predict the same for youths.

This chapter examined the relationship between density, crowding and privacy also including the literature studies of the past. This examination was especially based on campus dormitories. This study also used previous research findings and methods. The next chapter reveals the hypotheses, setting and methodology of this study to answer some of the research questions.



CHAPTER IV

THE CASE STUDY

This chapter contains research questions, hypotheses, and methodology of the study, including the setting, sample group and research instruments.

4.1. Aim of the Study

This study was conducted to estimate the satisfaction level of undergraduate students with respect to the dorms they are living in by defining fundamental and relatable factors to it. The study was done on undergraduate students in Bilkent University Dormitories to estimate satisfaction of accomodation in these dormitories, again parallel with the factors defined beforehand.

4.1.1. Research Questions

The research questions are as follows:

1. Is there a relationship between students' personal characteristics (gender, age) and background: family size, and the number of people sharing a bedroom at one's home and crowding in dormitories?

2. Is the distance between community area (bathroom) and room related to crowding?
3. Is length of stay related to dormitory satisfaction?

4.1.2. Hypotheses

1. Increased density in dormitories is correlated with crowding and privacy.
2. Crowding is positively correlated with overall satisfaction in dormitories.
3. Rooms close to community area (bathroom) are perceived as more crowded than rooms in farther from this area.
4. There are gender differences in terms of crowding, privacy, overall satisfaction and perception of room size in dormitories.
5. Large family size during childhood is correlated with crowding and overall satisfaction in dormitories.
6. Length of stay in dormitories is negatively correlated with overall satisfaction in dormitories.
7. School satisfaction is positively correlated with dormitory.

4.2. Methodology

4.2.1. Site Description

Bilkent University has 19 high-rise buildings that are located on a hilltop near the main campus and their stories are between four and six. These buildings are used as dormitory complex for undergraduate students. Bilkent University was chosen because of the dormitory complex is in the center of the main campus (see Figure A.1 in Appendix A).

Two types of dormitories were chosen for this research. Both of them are located in same area in the main campus. These dormitories have similar distances to faculty buildings. Toilets and kitchens are open to common user access in dormitories. Each room has beds, desks, chairs and wardrobes according to the number of people stay in the room. The first type of dormitory was the 72nd and 73rd dormitories (see Figure A.3 and Figure A.5 in Appendix A). These dormitories are neighbor to each other (see Figure A.2 and Figure A.4 in Appendix A). Both of them have similar views and visual expanses. Each room is 6.10x3.40m. Though they are identical size, these type of rooms accommodate four students in 72nd dorm, and three students in 73rd dormitory. In other words their density changes based solely on the number of students living in the rooms. Moreover, both dormitories have short-corridors and each room is next to a bathroom (see Figure 1 and Figure 2).

The second type of dormitory was the 76th dormitory (see Figure A.6 in Appendix A). This dormitory building consists of two sections. Men and women stay in different sections. All physical features such as floor plans, room shapes and sizes are the same and also dormitories have long-corridor (see Figure 3). Each room is 3.20x2.70m in this dorm. Although rooms are identical size, one or two people stay in these rooms (see Figure A.7 and Figure A.8 in Appendix A) so that brings with same density rate for each rooms similar to 1st type dormitory mentioned above. There are community area (bathroom) at the center of each floor and section of the dormitories. In addition to survey questions, 76th dormitory that includes single and

double rooms separated to three different zones (see Figure 4). The first zone consists of rooms that are closest to community area while third zone involves outermost rooms. These zones were named as close, medium and far (see Figure 4).

The purpose of doing this is, it is assumed that in dormitories with long corridors, distance to community areas (such as bathrooms) might affect the privacy-crowding relationship and correspondingly increasing general satisfaction related to the dormitory. Students in the dormitories using centralized community bathroom claimed that they felt the most crowding, while students using suite baths did not feel crowded at all (Huang, 1982).

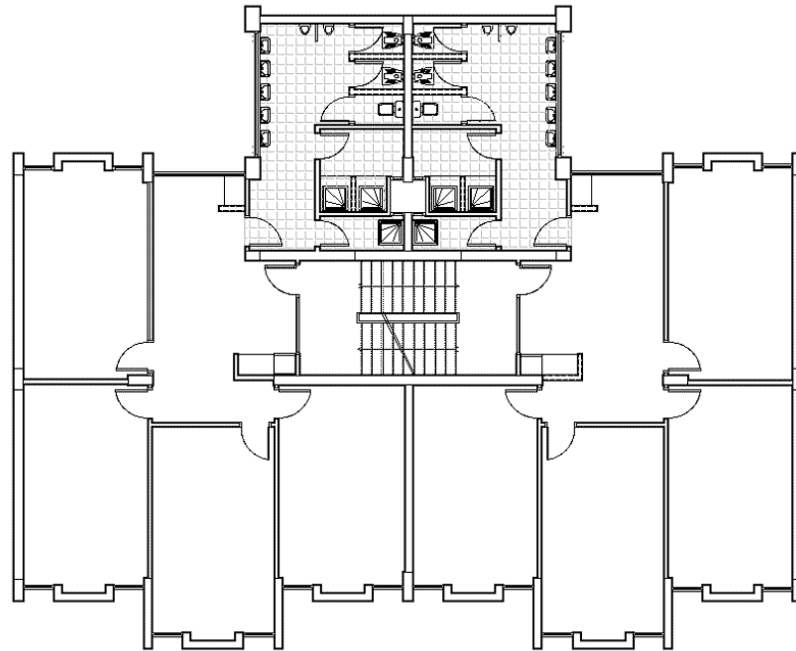


Figure 1. Plan of 72nd dormitory

(http://www.bilkent.edu.tr/bilkent-tr/admin-unit/yurt/foto/71_72/71kat.gif)

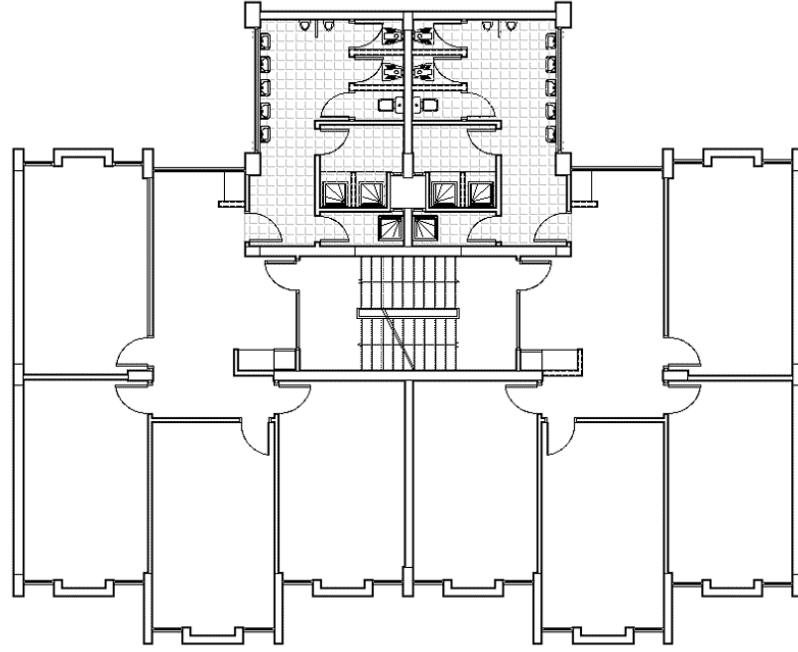


Figure 2. Plan of 73rd dormitory

(http://www.bilkent.edu.tr/bilkent-tr/admin-unit/yurt/foto/73_74/73kat.gif)

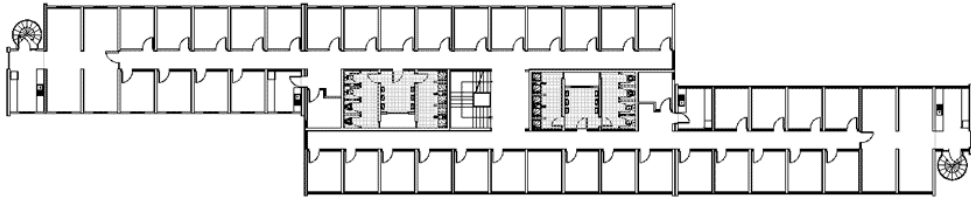


Figure 3. Plan of 76th dormitory

(<http://www.bilkent.edu.tr/bilkent-tr/admin-unit/yurt/foto/76/76kat.gif>)

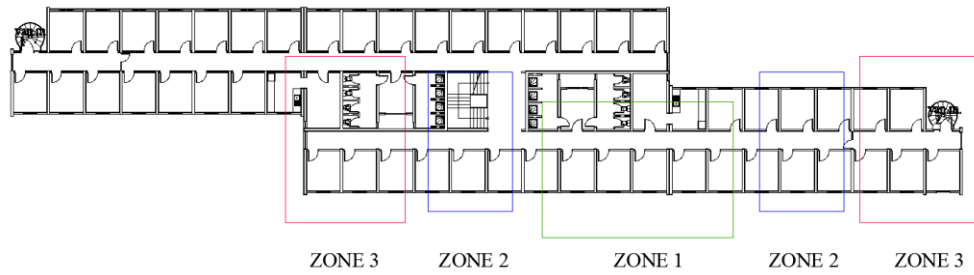


Figure 4. Different distance to community area (bathroom)

4.2.2. The Sample

The study was conducted with 200 Turkish individuals consisting of 132 males and 62 female participants. For 72nd and 73rd dormitories, 40 more students and for 76th dormitory, 120 more students were included for the scope of this study.

Foreign students were not included in this research to control possible effects of cultural differences. All volunteers participated without any refusals. Participants consisted of undergraduate students with an age range of 17 to 27. The surveys were conducted in respondents' own dormitories by using convenience sampling. This was preferred because of it is speed and easy.

4.2.3. Questionnaire and Procedure

Questions were designed based on the findings of the previous studies (e.g., Kaya and Erkip, 2001; Amole, 2009). The Turkish and English versions of structured interviews can be found in Appendices A and B. It appraised the thoughts of students about room size, pleasure with room and dormitory, privacy level in the

room and floor, interval of coming across with strangers on the floor where the student's room is located, connection between room location to common area and feeling of getting crowded, get on with roommate, demographic features of the people who spent years in school, continuation period of stay in a dormitory room, the number of people who share a bedroom at home and their family size.

Considering the overall reliability of the survey, 0.823 Cronbach's alpha index has been found.

This method was implemented during spring semester in May, 2015. The questionnaires were filled out by students individually on hard copies in entrance halls of their dormitories. There wasn't any limitation about time for answering. The questionnaire consisted of three different sections including 31 questions. These questions were prepared in Turkish (see Appendix B). The first eight questions were prepared to understand demographic features of students and room types that they stayed. Room number that was asked in question one was used to determine the distance of the dormitory room the bathroom, classifying it as medium and far. While the second question defined the room type, the third and fourth question were aimed to understand the demographic structure as in gender. The fifth question asked the time they spent in Bilkent University Dormitories, classifying them as "less than six months", "six months- two years", and "more than three years". The sixth question was related to the crowding density with their childhood house, asking how many people the subject stayed within its room while growing up. The seventh question was there to determine how many people subject lived

with in the house they lived in, classifying the answers as “less than four people”, “four people” and “more than four people”.

The second and third section, 9th between 31th questions consisted of questions that prepared with Likert type 5-point scale. Second section consists of 9th between 25th questions. These questions include room, dorm, school and life assessments. As a part of assessment, scales range from least ‘Strongly disagree’ to most ‘Strongly agree’. Third section consists of between 26th and 31th questions. These questions query frequency of statuses that students encounter in room, dorm, roommate, floor mate and school. These answers of questions range from least ‘Never’ to most ‘Always’.

This chapter will tell us of the the process of designing and the instruments used to finalize the research. The following chapter also includes findings along with statistical analysis and personal characteristics, satisfaciton level of dormitory room, differences between room types, room evaluations and factors that affect crowding along with general satisfaction. Also, there are several correlations among general satisfaction, duration of stay, importance of room, room satisfaction, dormitory satisfaction, school satisfaction, academic success, crowding, privacy, relations with people and shared time with people in same room.

CHAPTER V

RESULTS

In this chapter, the findings are presented. While analyzing the results obtained from the case study, statistical analyses were done to test the hypotheses. The performed statistical analyses are explained.

5.1. Demographics

A total of 200 students from two different size of dormitory rooms participated in the study (62 women and 138 men; see Table 1). The average age was 21 with an age range of 17 to 27 (see Table 1). Dormitory rooms type I consisted of rooms that had either single or double bed. The areas of these rooms located in 76th dormitory were the same, while the number- of the students living in these rooms was different. One hundred and twenty students living in the first type of dormitory rooms participated in the survey (see Table 2). Dorm type II included the rooms with three or four inhabitants. These ones were located in 72th and 73rd dormitories, which were adjacent to each other in the university campus. The number of the people living in this type of rooms is various as well; however, these rooms have the same area. Eighty students living in the second type of

dormitories attended in the study (see Table 2). Considering three different categories were based on number of people living with them in same space, while growing childhood times in their hometown (see Table 3). According to categories, 112 students responded as single room, 63 students responded as sharing room with one person, and 25 students responded as sharing room with two or more people. In addition, speaking of growing ages at hometown, three groups created based upon family size (see Table 3). Thirty eight students as responded as “less than four people”, 113 students responded as “four people”, and 49 students as responded “more than four people”. Measuring the room area by all attendants; 125, 69 and 6 participants rated their as small, medium and large, respectively.

Table D.1 in Appendix D presents the number of the participants who answered each question from 9 to 25 out of the questionnaire. Also Table D.1 in Appendix D shows the average of the responses to each question relating to all participants. Such questions like; finding the dorm room spacious, to spend time with roommate(s) at the same time while being in the room, the importance of the dormitory room, get along well with the roommate(s) collaboratively, be satisfied with school and to feel successful with academic level were answered and comparing the responses given to these questions by the majority with the average of replies of all participants for each single question mentioned above results in the same scale in Likert type 5-point scale; notwithstanding other questions from the list, the majority and average responses are not correspondent to a same scale point.

The answers are available in Table D.2 in Appendix D, corresponding to the number of people who responded the questions from 26 to 31. Whereas, Table D.2 in Appendix D points out the average of responses given for each one and only one question. Just the responses given by majority to all inquiry and the average response related to all participants replying each case corresponds to different scale in Likert type 5-point scale, in the case of answering the question "I am in connection with my friends in the floor of my dorm room", while the majority responses to all questions and the average came out of replies to each query as regards to other questions are consistent with the same scale.

Table 1. Demographic distribution numbers of participants

Sample Characteristics		No
Gender		
	Women	62
	Men	138
Age		
	Min	17
	Max	27
	Mean	21

Table 2. Type of room distribution

Sample Characteristics		No
Room Structure Type		
76 th Dormitory	Single Room	60
76 th Dormitory	Double Room	60
73 rd Dormitory	Triple Room	40
72 nd Dormitory	Quad Room	40

Table 3. Personal background distribution numbers of participants

Sample Characteristics		No
Sharing Room in Childhood		
	Single Room	112
	Sharing Room with One Person	63
	Sharing Room with Two/and More People	25
Family Size Structure		
	Less Than Four People	38
	Four People	113
	More Than Four People	49

5.2. The Statistical Analyses

SPSS program was used for statistical analysis. Correlation, t-tests, chi-square tests, factor analysis and anova were used to test the hypotheses.

5.2.1. Factor Analysis of the Mean Ratings of the First and Second Scale

Factor analysis was divided into two because two different Likert type 5-point type scale was used. Named as in the first scale and the second scale, the first one consists of questions with the scale of 9-25. Second one is made of questions between 26-31.

To analyze the factor structure of the first scale, exploratory factor analysis was applied. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was found .77 which is satisfactory according to recommended value of .6 and Bartlett's test of sphericity was found significant, $\chi^2 (200) = 603,6$, $p < .01$. Also all of the communalities were above .30 which confirms that each item has a common variance with each other. These indicators show that the first scale was found suitable for factor analysis. A rotated component matrix was developed that extracted factors and their factor loadings. Factor loadings greater than 0.50 were considered to be correlated and below 0.50 were excluded.

Varimax rotated factor analysis results showed that the first scale was represented by five factors (see Table 4). These five factors explained %63,55 of the total

variance according to “eigenvalue greater than one” criterion. The first factor consisted of four items and it was named as “Room Satisfaction Factor”. It had an eigenvalue of 4,34 and accounted for %28,94 of the variance. The second factor consisted of three items and it was named as “Crowding/Socialization Factor”. It had an eigenvalue of 1,62 and accounted for %10,84 of the variance. The third factor consisted of two items and it was named as “Location/Crowding Factor”. It had an eigenvalue of 1,34 and accounted for %8,93 of the variance. The fourth factor consisted of three items and it was named as “General Satisfaction Factor”. It had an eigenvalue of 1,18 and accounted for %7,89 of the variance. The fifth factor consisted of two items and it was named as “Privacy”. It had an eigenvalue of 1,04 and accounted for %6,94 of the variance. Factor loadings are shown below.

To analyze the factor structure of the second scale, exploratory factor analysis was applied. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was found .61 which is satisfactory according to recommended value of .6 and Bartlett’s test of sphericity was found significant, $\chi^2 (200) = 49,71, p < .01$). Also all of the communalities was above .30 which confirm that each item has a common variance with each other. These indicators show that the second scale was found suitable for factor analysis. A rotated component matrix was developed that extracted factors and their factor loadings. Factor loadings greater than 0.50 were considered to be correlated and below 0.50 were excluded.

Varimax rotated factor analysis results show that the second scale is represented by two factors (see Table 5). These two factors can explained %48,72 of the total variance according to “eigenvalue greater than one” criterion. The first factor consisted of three items and it was named as “Crowding Factor”. It had an eigenvalue of 1,71 and accounted for %28,54 of the variance. The second factor consisted of three items and it was named as “Socialization”. It had an eigenvalue of 1,21 and accounted for %20,17 of the variance.

To understand between subfactors of the first scale correlation Table 6 shows that room satisfaction subfactor of the first scale has medium positive significant correlations with crowding/socialization, location/crowding and privacy subfactors of the same scale ($r = .38, .35, .36, p < .01$), respectively. Other from that crowding/socialization subfactor has medium positive significant correlations with location/crowding and privacy ($r = .33, .44, p < .01$), respectively. Also, there is a medium positive and significant correlation between location/crowding and privacy ($r = .31, p < .01$), and there is a positive significant but low correlation between location/crowding and general satisfaction ($r = .16, p < .05$). Lastly, there is a low, positive and significant correlation between general satisfaction and privacy ($r = .17, p < .05$). To understand the relationship subfactors of the second scale correlation Table 7 shows that there is a positive significant correlation between subfactors of the second scale, Crowding and Socialization ($r = .15, p < .05$).

The relationship between subfactors of the first and second scale correlation Table 8 shows that there is positive and significant correlations between crowding subfactor of the second scale and all subfactors of the first scale namely, room satisfaction factor, crowding/socialization factor, location/crowding factor, general satisfaction factor, and privacy factor ($r = .33, .49, .45, .25, .44, p < .01$), respectively. Furthermore, socialization subfactor of the second scale has significant correlations with all subfactors of the first scale except privacy subfactor. It has positive significant correlations with room satisfaction, crowding/socialization, location/crowding and general satisfaction ($r = .19, .26, .24, .25, p < .01$), respectively.

Additionally, to understand the effect of bathroom proximity of rooms on location/crowding subfactor of the second scale, one way ANOVA analysis was conducted. Can be seen from the Table 9, the differences between location/crowding scores were not significant with regard to their room's bathroom proximity ($F = 1.98, p > .05$).

Table 4. Factor analysis of the first scale

Room Satisfaction Factor	Factor Loadings
I find my dormitory room sufficient in general.	,79
I am satisfied with my dormitory room.	,77
I find my dormitory room spacious.	,72
I find the day light in my dormitory room sufficient.	,58

Table 5. (cont'd)

Crowding/Socialization Factor	Factor Loadings
I feel disturbed about spending time with friends in my dormitory room.	,81
I live in harmony with my friends/dormitory friends.	,81
I feel crowding when I spend time with friends in my dormitory room	,63
Location/Crowding Factor	Factor Loadings
Generally, I feel crowding in my dormitory.	,82
I am satisfied with the location of my dormitory room.	,68
General Satisfaction Factor	Factor Loadings
I am satisfied with the view of my window.	,63
I am satisfied with my school.	,58
My dormitory room is important for me.	,57
Privacy Factor	Factor Loadings
I am satisfied with the privacy level in floor which my room located.	,72
I am satisfied with the privacy level in my dormitory room.	,67

Table 6. Factor analysis of the second scale

Crowding Factor	Factor Loadings
I encounter strangers on the dormitory floor.	,74
I am disturbed by noises around my dormitory room.	,73
I feel crowding in my dormitory room.	,56
Socialization Factor	Factor Loadings
I share time with my dormitory friends in my (dorm) room.	,75
In addition to sleeping, I also engage in some other activities in my dorm room	,58
I am in relation with my friends in the floor.	,57

Table 7. The relationship between subfactors of the first scale

	1	2	3	4	5
1-Room Satisfaction Factor	1				
2-Crowding/Socialization Factor	.38**	1			

Table 8. (cont'd)

3-Location/Crowding Factor	.35**	.33**	1		
4-General Satisfaction Factor	.13	.20	.16*	1	
5-Privacy Factor	.36**	.44**	.31**	.17*	1

** p < .01

* p < .05

Table 9. The relationship between subfactors of the second scale

	Crowding Factor	Socialization Factor
Crowding Factor	1	
Socialization Factor	.15*	1

* p < .05

Table 10. The relationship between subfactors of the first and second scale

	Crowding Factor	Socialization Factor
1-Room Satisfaction Factor	.33*	.19*
2-Crowding/Socialization Factor	.49*	.26*
3-Location/Crowding Factor	.45*	.24*
4-General Satisfaction Factor	.25*	.25*
5-Privacy Factor	.44*	.07

* p < .01

Table 11. The effect of bathroom proximity of rooms on location/crowding subfactor of the second scale

	Proximity	N	M	SD	F
Location/Crowding Factor	Close	28	3.03	.96	1.98
	Medium	41	3.12	.86	
	Far	51	2.73	1.05	

5.2.2. Intercorrelations Between Variables

The correlation analysis was conducted to examine the relationships between the variables. Variables in correlation analysis were general satisfaction, duration of stay, importance of room, room satisfaction, dormitory satisfaction, school satisfaction, academic success, pleasure, crowding, privacy, relations with people and shared time with people in same room. The overall correlation Table D.3 in Appendix D is shown below with significant results given bold. Table D.8 in Appendix D shows a negative significant correlation was found between general satisfaction and duration of stay in dormitory ($r = -.14, p < .05$). It is also understood from the table that, there is no significant correlation between importance of dormitory room for the participants and room satisfaction ($r = .12, p > .05$). As it is observed, there is a positive and significant correlation between importance of dormitory room for the participants and their dormitory satisfaction ($r = .20, p < .01$). Also, the correlation between importance of dormitory room for the participants and their school satisfaction is positive and significant ($r = .13, p < .05$). Moreover, as it is shown on the correlation table, room satisfaction has a positive significant correlation with dormitory and school satisfaction ($r = .57, p < .01, r = .14, p < .05$), respectively. By the way, the correlation between dormitory and school satisfaction is positively significant ($r = .27, p < .01$). Also, it was found that academic success was not correlated either with dormitory or with room satisfaction ($r = .02, -.06, p > .05$), respectively. It was realized that, there is a positive relationship between pleasure and crowding ($r = .55, p < .01$). Meantime, pleasure and privacy are positively correlated ($r = .49, p < .01$). Moreover, privacy was correlated with crowding as well ($r = .47, p < .01$). While it is found that

participants' relations with people in same floor is positively and noticeably associated with general satisfaction ($r = .16, p < .05$). In the following, it is discovered that crowding and shared time with people in same room have positive and substantial relevance ($r = .17, p < .05$). Besides, privacy and shared time of participants with other people in the same room have no major connection between each other ($r = .01, p > .05$). It is found that there is a negative significant correlation between general satisfaction and duration of stay in dormitory ($r = -.14, p < .05$).

5.2.3. The Effect of Personal Characteristics

A noticeable difference between women and men participants in their crowding scores was not detected ($t = .71, p > .01$; see Table D.4 in Appendix D). However, a significant variance is realized comparing women and men participants, according to their privacy scores ($t = 2.31, p < .05$; see Table D.5 in Appendix D). It is followed by a meaningful discrepancy between women and men participants according to their general satisfaction scores ($t = 2.62, p < .01$; see Table D.6 in Appendix D).

Table D.7 in Appendix D shows the variance of crowding level is influenced by participants' family size. Family sizes are identified as three groups. One way ANOVA analysis defines that there is no variety between these three different family sizes ($F(2, 197) = .23, p > .05$). Table D.8 in Appendix D represents that the variance of general satisfaction level is based on participant's family size. And one way ANOVA analysis shows no difference between these three different family sizes ($F(2, 197) = .43, p > .05$). In the analysis of whether there is an effect of shared

room in childhood on crowding, it is found that there is no major difference between shared room types with crowding level ($F(2, 197) = .11, p > .05$; see Table D.9 in Appendix D). Similarly, in the analysis of the possibility of general satisfaction effected by shared room in childhood, it is observed that there is no significant difference between shared room types with general satisfaction level ($F(2, 197) = .79, p > .05$; see Table D.10 in Appendix D). One way ANOVA analysis shows that there is no variety between these three different shared room types according to their disturbed feelings of sparing time with friends in dormitory rooms ($F(2, 137) = .15, p > .05$; see Table D.11 in Appendix D). In the similar way, one way ANOVA analysis revealed no difference between these three different shared room types considering their crowding spending time with friends in dormitory room ($F(2, 137) = .01, p > .05$; see Table D.12 in Appendix D).

5.2.4. The Effect of Satisfaction Level of Dormitory Room

To realize if the satisfaction level of dormitory room leaves any effect on crowding, an analysis is applied and it is found that there is an important difference between satisfaction levels with crowding level of dormitory room ($F(2, 197) = 19.83, p < .05$; see Table D.13 in Appendix D). In the analysis of whether there is an effect of satisfaction level of dormitory room on privacy, it is observed that there is a significant variance between satisfaction levels with privacy level of dormitory room ($F(2, 197) = 10.11, p < .05$; see Table D.14 in Appendix D).

5.2.5. The Effect of Room Type Differences

In order to understand the relationship between number of persons in the same size room and crowding, independent samples t test was conducted. There is a major difference between room with one and two persons according to their crowding level ($t = 2.01, p < .05$; see Table D.15 in Appendix D) and also there is a considerable variety between room with three and four persons based on their crowding level ($t = 3.16, p < .01$; see Table D.16 in Appendix D). The relationship between number of persons in same size room and privacy are realized by conducting the independent samples t test. As it is seen on the Table D.17 in Appendix D, there is an important difference between room with one and two persons according to their privacy level ($t = 3.06, p < .01$). However, there is no considerable diversity between room with three and four persons according to their privacy level ($t = 1.60, p > .05$; see Table D.18 in Appendix D). As it is understood from Table 28, there is no major discrepancy between room with one and two persons according to their general satisfaction level ($t = .73, p > .05$). However, there is a significant difference between room with three and four persons according to their general satisfaction level ($t = 2.83, p < .01$; see Table D.20 in Appendix D).

5.2.6. The Effect of Room Evaluation

In order to analyze the relationship between room evaluation and room size, chi-square test was applied. A significant connection is defined between these variables ($\chi^2 (6, 200) = 56.37, p < .01$). This relationship has major and large effect size, $\phi =$

.53 as well. Henceforth, it is concluded that room evaluation and room type are prominently related to each other (see Table D.21 in Appendix D). Chi-square test was conducted, in order to analyze the relation between room evaluation and gender. Between these variables a important relationship is found ($\chi^2 (2, 200) = 26.60, p < .01$). As effect size of this relationship is considerable, $\phi = .36$. Thus, the obtained conclusion is that room evaluation and gender are significantly related to each other (see Table D.22 in Appendix D). One way ANOVA analysis shows that there is a difference between room evaluations according to their feelings of crowding in their dormitory room ($F (2, 197) = 4.19, p < .05$; see Table D.23 in Appendix D). In the following, no difference between room evaluations is detected according to their feelings of privacy in their dormitory rooms in one way ANOVA analysis ($F(2, 197) = 2.55, p > .05$; see Table D.24 in Appendix D).

5.2.7. Factors That Influencing Crowding and General Satisfaction

In order to understand which factors have a significant effect on general satisfaction, regression analysis was applied. The result shows that regression model was significant, $R^2 = .731$; $F (3,196) = 177,492, p < .01$. This means that pleasure, privacy and crowding explain %73,1 of the general satisfaction variable's variance. Pleasure ($\beta = .874; p < .01$) and privacy ($\beta = -.107; p < .05$) significantly effect crowding, however crowding ($\beta = .053; p > .05$) does not significantly effect general satisfaction (see Table D.25 in Appendix D).

In order to understand which factors have a significant effect on crowding, regression analysis was applied. The result shows that regression model was significant, $R^2 = ,364$; $F(3,196) = 37,426$, $p < ,01$. This means that pleasure, general satisfaction and privacy explain %36,4 of the crowding variable's variance. Pleasure ($\beta = ,305$; $p < ,01$) and privacy ($\beta = ,283$; $p < ,01$) significantly effect crowding, however general satisfaction ($\beta = ,125$; $p > ,05$) does not significantly effect crowding (see Table D.26 in Appendix D).

All the data collected via interviews and observation sheet is presented on this chapter with results from statistical analysis. The following chapter discusses these findings in detail along with statistical analysis. Previous studies are also compared with this study which can also be found in this chapter.

CHAPTER VI

DISCUSSION

In this chapter, findings from statistical analysis presented in the previous chapter are discussed. Potential implications of these findings are explained and compared with those found in the literature. Furthermore, limitations of this study are given in this chapter. This study was conducted to measure how personal traits and properties of dormitories affect the feeling of crowding and the general satisfaction they live through amongst people who live in dormitories.

6.1. Relationship Between Variables

Living on campus faraway from one's family for a long duration is a good chance to gain experience for students. They have chance to learn how to compromise with other students and roommates, share space and facilities. As a result of this study, positive and strong correlation between general satisfaction levels, dormitory satisfaction levels, dormitory room satisfaction levels and school satisfaction levels was found amongst the participants. Variables are found to be correlated; when

one variable is increased all the others follow or when one variable is decreased the others also decrease. In the study, there are meaningful correlations between pleasure, crowding and privacy. As a result to these analyses, pleasure and privacy are identified as factors that affect crowding. According to this, pleasure and privacy seem to have a negative effect while general satisfaction has no effect on crowding. As a result to these analyses, while increasing pleasure and privacy decreases crowding, change in general satisfaction did not cause any fluctuation on crowding. On the other hand, only pleasure and privacy affects the general satisfaction while crowding has no effect on it. Amole (2005) stated that dormitory satisfaction for students is determined by crowding and privacy factors in their dormitory rooms. Richardson, Vinsel and Taylor (1980) focused feeling of their privacy led to an increase in the satisfaction level of students with their living circumstance. The correlation between general satisfaction and length of stay in dormitories is negatively correlated with overall satisfaction in dormitories. It means that, if duration of stay in dormitory increases, general satisfaction level decreases and vice versa. Finally, pleasure and privacy significantly affect crowding; however, general satisfaction does not significantly affect crowding.

6.2. The Effect of Personal Characteristics

When the results are examined, crowding does not seem to differ according to gender. According to this, whether women or men who shared their rooms in their childhood or not and parental size-at-age does not seem to influence crowding. On the other hand, we found that the difference between women and men responses

in the way they sense their dormitory ambiance was significant. It is occurred as men seem to be more overall satisfied compared to women if we take general. Mandel et al. (1980) indicates that women are more likely to spend more time in their room and more sensitive to the room's physical sufficiency. That is why it is possible to state that the reason men has more general satisfaction is because they have less expectation than women. Low expectation increases the satisfaction rating. However, other demographic features suggest that these do not have a significant difference according to general satisfaction. When the research is examined in the aspect of privacy, women having more privacy compared to men are observed. It is correct to assume that women giving more importance to privacy have effect on this result. According to study results, whether a participant shared her room or lived alone in her room during childhood and family size seem to have no effect on the feeling of crowding and privacy on dormitories. Furthermore, feelings of crowding and privacy are not affected by the way a participant lived in its childhood, alone in its room or sharing it with other individuals.

6.3. The Effect of Satisfaction Level of Dormitory Room

When we look at these results, individuals who were not satisfied by the dormitory rooms were more affected by feelings of more crowding and less privacy. As participants found dormitory rooms more satisfactory, they appeared to be less affected from crowding and more affected from privacy. As a parallel result to this, Kaya and Erkip (2001) claim that, satisfaction of a student from a dormitory room is directly connected to student's perception of their privacy and according to Schmidt

(1977), individuals who are affected by excessive crowding more are also unhappy with their level of privacy. Pleasure and privacy significantly effect crowding, however general satisfaction does not significantly effect crowding.

6.4. The Effect of Room Type Differences

Density means number of social units per unit of space. The term crowding is often used in the same meaning with high density. How one perceives density and crowding experience is dependent on the way an individual processes environmental cues of high levels of potential crowding and loss of privacy control (Rapoport, 1977). These values create major differences in the way student's perception of satisfaction level. In the dormitory rooms where the participants lived in, square meter per person in a dormitory room has some effects on crowding, general satisfaction and privacy. According to the results, individuals who lived alone in the dormitory rooms in 76th dormitory felt less crowding and more privacy compared to those who live in two; however, no differences were observed between their general satisfaction levels. It can be said that, when individuals live alone in a dormitory room, they have wider personal space which results in increased privacy and decreased crowding at the same ratio. On the other hand, people who stayed as three people in 72th and 73rd dormitory rooms of same size is determined to feel less crowding with higher general satisfaction compared to people who stay as four people; however, despite the fact that their room size is the same, there were no differences in terms of privacy between three people rooms and four people rooms. From this point of view, it can be assumed that,

when the amount of people living in the same amount of square meters decreases, crowding also decreases. Higher satisfaction level of three people rooms compared to four people rooms can be explained with the fact that four people rooms give a greater feeling of crowdedness and cause issues of comfort due to lack of space. When examined generally, living with more people in the same amount of square meters causes the feeling of crowdedness to increase and this feeling of crowding affects general satisfaction and privacy indirectly.

6.5. The Effect of Room Evaluation

According to the result, single and double rooms are considered as small, room of three or four people are considered medium-sized by the habitants. Furthermore, while majority of women qualified their room as small, men usually qualified their room as small or medium-sized. On the other hand it is observed that none of the women, and few of the men rated their room as large. This situation can be explained by the habitant's expectations. While the size of single and double rooms in the 76th dormitory room was 3.20m x 2.70m, the size of rooms accommodating three or four people in the 72th and 73rd dormitory room was 6.10m x 3.40m. That is why habitants in single and double rooms evaluated their rooms as small; meanwhile the habitants of rooms accommodating 3 or 4 people evaluated their rooms as middle-sized. In a similar result Kaya and Erkip (2001) stated that women estimated their rooms as smaller than men. Besides all these, it is observed that individuals evaluating their rooms as small are feeling more crowding, yet amongst individuals who evaluate their room's size privacy is unaffected. Kaya and Erkip

found (2001) found out that a room feels more satisfactory when the individual perceives the room as large with an increase on feeling of privacy. Therefore we can say, an individual who claim their room is larger with higher privacy were more content about with their room, or vice versa.

When we look at crowding, general satisfaction and privacy's differences from one dormitory to another, only privacy changes in between while crowding and general satisfaction does not differ from one dormitory to another. Individuals who live in 76th dormitory named "long corridor" feels less privacy compared to individuals who live in 72th and 73rd dormitory also known as "short corridor". Long corridors also bring greater competitiveness and social withdrawal, with reduced cooperativeness and lack of personal control (Baum et al., 1979). In addition to this, as a result of a study parallel and explanatory to this research, high- rise student housing may trigger greater perceived crowding and many other attitudes such as perceived control, safety, privacy and satisfaction with the building along with interaction quality with other students in a negative way (McCarthy & Saegert, as cited in Huang, 1982).

6.6. Factors That Influencing Crowding and General Satisfaction

Pleasure, privacy and crowding explain the general satisfaction variable's variance. Pleasure and privacy significantly effect crowding, however crowding does not significantly effect general satisfaction. Pleasure, general satisfaction and privacy

explain the crowding variable's variance. Pleasure and privacy significantly effect crowding, however general satisfaction does not significantly effect crowding.

Finally, the effect of proximity of dormitory rooms to bathrooms on an individual's perception of crowding, general satisfaction and privacy were also examined.

According to the results found, having a short, mid-distance or long distance to bathrooms or restrooms, have no effect on individuals perception of crowding, general satisfaction and privacy. In the literature, Huang (1982) found that students who live in a floor sharing a single community bath feels more crowded but students who live in floors with multiple bathrooms located separately feel less crowded.

Statistical analysis which was discussed in the previous chapter is discussed on this chapter as well with comments and discussions about its findings. The next chapter, which is also the conclusion, entire study will be summarized and findings will be discussed in detail with its implications. Limitations with suggestions for future study are also included in the conclusion chapter.

CHAPTER VII

CONCLUSION

To get a better education, many students living in dormitories prefer to continue their education in cities that can be far from their hometowns. This lifestyle that was invented recently creates occasions about living in common spaces and facilities with harmony, and compatibility with other students sharing a room, while learning the challenges and benefits of independence. The aim of this study is to identify the most important factors affecting students' satisfaction level during their stay on campus. Level of satisfaction is dependent on four subtitles. These four different are, understanding the relationship between density and crowding in rooms with different densities, the relationship between density and crowding in rooms which are far away from semi-private areas, to put demographic differences in comparison and to compare the level of stay.

Bilkent University was chosen because its dormitory complex is inside the campus area. Two hundred Turkish students participated in the study. A questionnaire was

utilized for the study with questions inquiring about issues related to students, about room size, pleasure with room and dormitory in general, privacy level of each room and floor, time interval of coming across with strangers on the floor where their room is located, connection between the room and the commonly used area and the feeling of getting crowded, relations between roommates, demographic features of the people who spent years in school, continuation period of stay in dormitory room, the number of people sharing a bedroom at home with others and their family size.

This research was conducted with people who live in dormitories to evaluate their feeling of crowding along with their general satisfaction with respect to specific features and traits of dormitories. According to the study, crowding is not a variable dependent on gender, shared room in childhood and participant's family size. As a result to this research, we can claim that gender has no differing effects on crowding. Furthermore, in the relationship between privacy and satisfaction; the way different genders perceive from their environment is substantial. However, other demographic features (sharing rooms at childhood, parental size-at-age) show that a significant difference does not exist between crowding, privacy and general satisfaction. The correlation between general satisfaction and length of stay in dormitories is negatively correlated with overall satisfaction in dormitories

It was found that, those who were not satisfied by the dormitory rooms were more concerned by the aspects of crowding and less with privacy. Participants who found the dormitory more satisfactory all claimed that, their environment had less

crowding and more privacy in their perception. In the dormitory where the participants lived in, crowding and privacy was also affected by square meter per person in a room.

Additionally, another analysis on the study is that single and double rooms were found to be perceived considered to be small and rooms for three and four people are acknowledged as medium-size by the participants. Furthermore, majority of women claimed that their room is small while men claimed it to be small or medium-sized. As a separate physical factor, the distance to bathroom was examined in 76th dormitories, in long corridors. According to these results, distance to bathroom has no effect on the way individuals perceive crowding, general satisfaction and privacy.

This study could be invaluable to interior designers, architects and researchers, by evaluating the factor of satisfaction to their studies in their interior design principles. Also study shows that there are considerable differences for different user groups, which is something to consider if they are designing the project for a specific user group. In the study, how physical factors in dormitories effect the dormitory satisfaction for students is examined. Therefore, different physical factors are also available to architects and interior designers for them to focus on when designing a dormitory.

Limitations and Suggestions for Future Research

The limitation is connected to the properties of physical surroundings. If crowdedness of outside environment affects crowding's tolerable degree as suggested by Carnahan, Gove and Galle (1974), our data which we obtained from selected dormitories from Bilkent University which is a low density may not be compared to multi-story dwellings in locations within the inner-city. Another limitation would be that,, each dormitory might have different features, and it might create different situations and fluctuations for different students, and only few could be surveyed in this study. The sample group only includes students from two dormitory buildings living in Bilkent University. As a conclusion, further study could reveal the differences on perceived crowding in two cases by comparing multi-story dormitories in two separate locations, within central city and outside the city. Furthermore, comparing private dormitories and state dormitories can also be a different specific type of research topic. In addition to this, this research can also be carried to offices, elderly care houses and hospitals.

REFERENCES

- AlKandari, N. (2007). Students' perceptions of the residence hall living environment at Kuwait University. *College Student Journal*, 41(2), 327-335.
- Altman, I. (1975). *The environmental and social behavior*. Monterey, CA: Brooks/Cole.
- Altman, I. (1976). A conceptual analysis, *Environment and Behavior*, 8, 7-29. doi: 10.1177/001391657600800102
- Amole, D. (2005). Copying strategies in students' residential facilities. *Environment and Behavior*, 37, 201-219.
- Amole, D. (2009). Residential satisfaction in students' housing. *Journal of Environmental Psychology*, 29, 76-85.
- Araujo, P., & Murray, J. (2010). Estimating the effects of dormitory living on student performance. *Social Science Research Network*. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1555892
- Astin, A. W. (1973). The impact of dormitory living on students. *Educational Record*, 54, 204 -210.
- Astin, A. W. (1984). Student involvement: A development theory for higher education. *Journal of College Student Personnel*, 25, 297-308.

- Astin, A. W. (1993). What matters in college? Four critical years revisited. San Francisco: Jossey-Bass.
- Ballou, R., Reavill, L., & Schultz, B. (1995). Assessing the immediate and residual effects of the residence hall experience: Validating Pace's 1990 study of on-campus and off campus students. *Journal of College and University Student Housing*, 25, 16-21.
- Balogh, C., Grimm, J., & Hardy, K., (2005). ACUHO-I Construction and Renovation Data: The latest trends in housing construction and renovation. *Journal of College and University Student Housing*, 33(2), 51-56.
- Baron, R.M., Mandel, D.R., Adams, C.A., & Griffen, L.M. (1976). Effects of social density in university residential environments, *Journal of Personality and Social Psychology*, 34(3), 434-446. doi: 10.1037/0022-3514.34.3.434
- Baum, A., Herpin, R.E., & Valins, S. (1975). The role of group phenomena in the experience of crowding, *Environment and Behavior*, 7(2), 185-198. doi: 10.1177/001391657500700204
- Baum, A., & Koman, S. (1976). Differential response to anticipated crowding: Psychological effects of social and spatial density, *Journal of Personality and Social Psychology*, 34(3), 526-536. doi: 10.1037/0022-3514.34.3.526
- Baum, A., Aiello, J. R., & Calesnick, L. (1978). Crowding and personal control: Social density and the development of learned helplessness, *Journal of Personality and Social Psychology*, 36(9), 1000-1011. doi: 10.1037/0022-3514.36.9.1000
- Baum, A., Davis, G. E., & Valins, S. (1979). Generating behavioral data for the design process. In J. R. Aiello & A. Baum (Eds.), *Residential crowding and design* (pp. 175-197). New York: Plenum.

- Baum, A., & Davis G. E. (1980). Reducing the stress of high-density living: An architectural intervention, *Journal of Personality and Social Psychology*, 38(3), 471-871. doi: 10.1037/0022-3514.38.3.471
- Baum, A., & Paulus, P. B. (1987). Crowding. In I. Altman & D. Stokols (Eds.), *Handbook of environmental psychology* (pp. 533-570). New York: Wiley-Interscience
- Bekurs, G. (2007). Outstanding student housing in American community colleges: problems and prospects. *Community College Journal of Research and Practice*, 31, 621-636.
- Bland, J., & Schoenauer, N. (1966). *University Housing in Canada. 1st Edn*, McGill University Press, Canada, 127.
- Blimling, G. S. (1993). The influence of college residence halls on students. In J. Smart (Ed.), *Higher education: Handbook of theory and research. Volume IX* (pp. 248-307). New York: Agathon.
- Botha, F., Snowball, J., Klerk, V., & Radloff, S. (2015). *A New Research Agenda for Improvements in Quality of Life*. Determinants of student satisfaction with campus residence life at a South African University. (pp. 17-25). Switzerland: Springer.
- Carnahan, D., Walter, G., & Galle, O. (1974). Urbanization, population density, and overcrowding: Trends in the quality of life in urban America, *Social Forces*, 53(1), 62-72. doi: 10.1093/sf/53.1.62
- Chickering, A. W. (1971). Education outcomes for commuters and residents. *Educational Record*, 52, 255-261.

- Chickering, A. (1974). *Commuting versus resident students: Overcoming educational inequities of living off campus*. San Francisco: Jossey-Bass.
- Cozby, P.C. (1973). Effects of density, activity, and personality on environmental preferences, *Journal of Research in Personality*, 7, 45-60. doi: 10.1016/0092-6566(73)90031-7
- Dahlan, N.D., Jones, P.J., Alexander, D.K., Salleh, E., & Alias, J. (2009). Evidence base prioritisation of indoor comfort perceptions in Malaysian typical multi-storey hostels, *Building and Environment*, 44(10), 2158-2165.
doi: 10.1016/j.buildenv.2009.03.010
- Demirbas, O., & Demirkan, H. (2000). Privacy dimensions: A case study in the interior architecture design studio. *Environmental Psychology*, 20, 53-64.
- Desor, J.A. (1972). Toward a psychological theory of crowding, *Journal of Personality and Social Psychology*. 21, 79-83. doi: 10.1037/h0032112
- Eoyang, C. (1974). Effects of group size and privacy in residential crowding, *Journal of Personality and Social Psychology*, 30, 189-392. doi: 10.1037/h0036885
- Ehrlich, P., & Ehrlich, A. (1970). *Population, resource, environment: Issues in human ecology*. San Francisco: W. H. Freeman.
- Francescato, G., Weidemann, S., & Anderson, J.R. (1989). *Evaluating the built environment from the users point of view: An attitudinal model of residential satisfaction*. In W. F. E. Preiser (Ed.), *Building Evaluation* (pp.181-198). NY: Plenum Press.

- Francescato, G. (2002). *Residential satisfaction research: the case for against*. In J. I. Aragonés, G. Francescato, & T. Garling (Eds.), *Residential environments: Choice, satisfaction and behavior* (pp. 15-34). London. Bergin and Garvey.
- Galster, G. (1987). Identifying the correlates of residential satisfaction: An empirical critique. *Environment and Behaviour*, 19, 53-568.
- Gifford, R. (1997). *Environmental psychology: Principles and practices*. USA: Allyn and Bacon.
- Hassanain, M.A. (2008). On the performance evaluation of sustainable student housing facilities, *Journal Facilities Management.*, 6, 212-225.
doi: /10.1108/14725960810885989
- Huang, E. T. (1982). Impacts of environmental design on residential crowding. *Dissertations and Theses*. Paper 774.
- Jain, U. (1987). Effects of population density and resources on the feeling of crowding and personal space, *Journal of Social Psychology*, 127, 331-338.
doi: 10.1080/00224545.1987.9713699
- Karlin, R. A., Rosen, L. S., & Epstein, Y. M. (1979). Three into two doesn't go: A follow-up on the effects of overcrowded dormitory rooms, *Personality and Social Psychology Bulletin*, 5(3), 391-395. doi: /10.1177/014616727900500325
- Kaya, N., & Erkip, F. (2001). Satisfaction in dormitory building: The effects of floor height on the perception of room size and crowding, *Environment and Behavior*, 33, 35-53. doi: 10.1177/00139160121972855

- Khozaei, F., Hassan, A.S., & Khozaei, Z. (2010). The factors predicting students' satisfaction with university hostels, case study, Universiti Sains Malaysia. *Asian Culture and History*, 2(2), 148-158.
- Lee, T. (1968). Urban neighborhood as a socio-spatial schema. *Human Relations*, 21, 241-267.
- Moos, R., & Lee, E. (1979). Comparing residence hall and independent living settings, *Research in Higher Education*, 1(3). doi: 10.1007/BF00975125
- Mandel, D. R., Baron, R.M., & Fisher, J.D. (1980). Room utilization and dimensions of density: Effects of height and view. *Environment and Behavior*, 12(3), 308-319.
- Marshall, N. J. (1972). Privacy and environment, *Human Ecology*. 1, 93-110. doi: 10.1007/BF01531349
- Melnikas, B. (1998). Management and modernization of housing facilities: specific features of central and eastern European countries, *Facilities*, 16, 326-333. doi: 10.1108/02632779810233601
- Mccrea, R., Stimson, R., & Western, J. (2005). Testing a moderated model of satisfaction with urban living using data from Brisbane-South East Queensland, Australia, *Social Indicators Research*, 72, 121-152.
- Mohit, M. A., Ibrahim, M., & Rashid, Y. R. (2010). Assessment of residential satisfaction in newly designed public low-cost housing in Kuala Lumpur, Malaysia. *Habitat International*, 34(1), 18-27.

- Najib, N.U., & Yusof, N.A. (2009). *A review of student housing facilities in higher learning institution*. Proceeding of the 3rd International Conference on Built Environment in Developing Countries), Dec. 2-3, School of Housing and Building Planning, Malaysia, 1817-1831.
- Najib, N.U., & Yusof, N. A. (2010). Identifying Factors Affecting Satisfaction with Student Housing: A Research Framework. *Proceeding of the 2nd International Postgraduate Conference on Infrastructure and Environment*, June 11-12, The Hong Kong Polytechnic University, Hong Kong, 1-2.
- Najib, N.U., Yusof, N. A., & Zulkifli, O. (2011). *Measuring satisfaction with student housing facilities*, *American Journal of Engineering and Applied Sciences*, 4(1), 52-60. doi: 10.3844/ajeassp.2011.52.60
- Natheer, N. A., & Anwar, F.I. (2002). The effect of dormitory type and room view on the perception of privacy and territoriality by female residents. 45(3), *Architectural Science Review*, 45(3), 231-241.
doi: 10.1080/00038628.2002.9697514
- Olujimi, B., & Bello, M.O. (2009). Effects on infrastructural facilities on the rental values of residential property, *Journal of Social Sciences*, 5(4), 332-341.
doi: /10.3844/jssp.2009.332.341
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students*. San Francisco: Jossey-Bass.
- Price, I., Matzdorf, F., Smith, L., & Agahi, H. (2003). The impact of facilities on student choice of university, *Facilities*, 21, 212-222.
doi: 10.1108/02632770310493580

- Rapoport, A. (1977). *Human Aspects of Urban Form: Towards A Man-Environment Approach To Urban Form and Design* (1st ed). New York: Pergamon Press.
- Rodger, S. C., & Johnson, A. M. (2005). The Impact of Residence Design on Freshman Outcomes: Dormitories Versus Suite-style residences. *The Canadian Journal of Higher Education*, 35(3), 83-99.
- Rohe, W., & Patterson, A. J. (1977). *The effects of density and partitioning on children's behavior*. Paper presented at the annual meeting of the American Psychological Association, San Francisco.
- Ross, M., Layton, B., Erickson, B., & Schopler, J. (1973). Affect, facial regard, and reactions to crowding, *Journal of Personality and Social Psychology*, 28(1), 69-76. doi: 10.1037/h0035587
- Saegert, S. (1975). Effects of spatial and social density on arousal, mood and social orientation, *Dissertation Abstracts International*, 35(7), 3649.
- Schiffenbauer, A. I., Brown, J. E., Perry, P. L., Shulack, L.K., & Zanzola, A. M. (1977). The relationship between density and crowding: Some architectural modifiers. *Environment & Behavior*, 9, 3-14. doi: 10.1177/001391657791001
- Schmidt, A. (1977). The effect of residential crowding and privacy on intimacy. *Electronic Theses and Dissertations*, 3957.
- Schmidt, D.E., Goldman R.D., & Feimer N.R. (1979). Perception of crowding: Predicting at the residence, neighborhood, and city level, *Environment and Behavior*, 11(1), 105-130. doi: 10.1177/0013916579111005

- Schroeder, C., & Mable, R. (1994). Residence halls and the college experience: Past and present. In C. Schroeder & R Mable (Eds.), *Realizing the educational potential of residence halls* (pp. 3-21). San Francisco: Jossey-Bass.
- Sitar, M., & Krajnc, K. (2008). Sustainable Housing Renewal. *American Journal of Applied Sciences*, 5(1), 61-66. doi: 10.3844/ajassp.2008.61.66
- Sohail, M.S., Rajadurai J., & Rahman, N.A. (2003). Managing quality in higher education: A Malaysian case study. *International Journal of Educational Management*, 17, 141-146.
- Stokols, D., Rall, M., Pinner, B., & Schopler, J. (1973). Physical, social, and personal determinants of perception of crowding. *Environmental and Behavior*, 5(1), 87-117.
- Sundstrom, E. (1975). An experimental study of crowding: Effects of room size, intrusion, and goal-blocking on nonverbal behaviors, self-disclosure, and self-reported stress, *Journal of Personality and Social Psychology*, 32(4)645-654. doi: 10.1037/0022-3514.32.4.645
- Susilawati, C. (2001). Student dormitory development plan with linear programming method. Proceeding of the PRREs 7th Annual Conference, (PRREsAC' 01), Surabaya, Indonesia, 1-8.
- Tennessen, C. M., & Cimprich, B. (1995). Views to nature: Effects on attention, *Journal of Environmental Psychology*, 15, 77-85. doi: 10.1016/0272-4944(95)90016-0
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of students attrition (2nd ed.)*. Chicago, IL: The University of Chicago Press.

- Turley, R. N., & Wodtke, G. (2010). College residence and academic performance: who benefit from living on campus. *Urban Education*, 45(4), 506-532.
- Valins, S., & Baum, A. (1973). Residential group size, social interaction and crowding, *Environment and Behavior*, 5, 421-436. doi: 10.1177/001391657300500404
- Richardson, D., Vinsel, A., & Taylor, S.P. (1980). Female aggression as a function of attitudes toward women, *Sex roles*, 6(2), 265-271. doi:10.1007/BF00287347
- Walden, T. A., Nelson, P. A., & Smith, D. E. (1981). Crowding, privacy, and coping, *Environment & Behavior*, 13, 205-224. doi: 10.1177/0013916581132005
- Weidemann, S., & Anderson, J.R.A. (1985). *A conceptual framework for residential satisfaction*. In I. Atman, & R. Werner (Eds.), *Home environments* (pp. 154-182). London: Plenum Press.
- Westin, A.F. (1970). *Privacy and freedom*. New York: Atheneum.
- Willoughby, B.J., J.S. Carroll, Marshall, W. J. I., & Clark C. (2009). The decline of in loco parentis and the shift to coed housing on college campuses, *Journal of Research on Adolescent*, 24, 21-36. doi: 10.1177/0743558408326914

APPENDIX A

DORMITORIES





Figure A. 1. Location of Bilkent Main Campus Dormitory

(<http://www.bilkent.edu.tr/bilkent-tr/general/map.html>)



Figure A. 2. View of 72nd dormitory

(http://www.bilkent.edu.tr/bilkent-r/admin-unit/yurt/foto/71_72/b7172_distan.jpg)



Figure A. 3. Quad room in 72nd dormitory

(http://www.bilkent.edu.tr/bilkent-tr/adminunit/yurt/foto/71_72/b7172_oda.jpg)



Figure A. 4. View of 73rd dormitory

(http://www.bilkent.edu.tr/bilkent-tr/adminunit/yurt/foto/73_74/b7374_distan2.jpg)



Figure A. 5. Triple room in 73rd dormitory

(http://www.bilkent.edu.tr/bilkent-tr/admin-unit/yurt/foto/73_74/b7374_oda3.jpg)



Figure A. 6. View of 76th dormitory

(http://www.bilkent.edu.tr/bilkent-tr/admin-unit/yurt/foto/76/b76_distan3.jpg)



Figure A. 7. Single room in 76th dormitory

(http://www.bilkent.edu.tr/bilkent-tr/admin-unit/yurt/foto/76/b76_oda1.jpg)



Figure A. 8. Double room in 76th dormitory

(http://www.bilkent.edu.tr/bilkent-tr/admin-unit/yurt/foto/76/b76_oda2.jpg)

APPENDIX B

SURVEY (TURKISH)



Bu anket, Bilkent Üniversitesi, İç Mimarlık ve Çevre Tasarımı Bölümü, Yüksek Lisans Tezi kapsamında yürütülen yurtlarla ilgili bir çalışmaya bilimsel veri sağlamak amacıyla hazırlanmıştır. Verdiğiniz bilgiler başka hiçbir amaçla kullanılmayacaktır.

****Katılımcı sayısı, bilimsel verilerin güvenilirliği açısından en önemli faktörlerden biridir; yardımlarınız tezim için önemlidir.**

Anketin tamamlanması ortalama 4 dakika sürmektedir. Çalışmaya sağladığınız katkıdan dolayı teşekkür ederim.

Bu çalışmayla ilgili sorularınız için: Email: dilara.kivancbilkent.edu.tr

Lütfen aşağıda verilen soruları cevaplayınız.

1. Oda numaranız:
2. Oda tipiniz: ☐ Tek Kişilik ☐ İki Kişilik ☐ Üç Kişilik ☐ Dört Kişilik
3. Yaşınız?
4. Cinsiyetiniz: ☐ K ☐ E
5. Bilkent Üniversitesi yurtlarında kaç aydır kalıyorsunuz?

6. Büyürken en çok vakit geçirdiğiniz evdeki odanızı aşağıdakilerden hangisi tanımlamaktadır?

Tek kişilik oda ☐

Bir kişi ile paylaşımlı oda ☐

İki veya daha çok kişi ile paylaşımlı oda ☐

7. Büyürken en çok vakit geçirdiğiniz evde siz dahil kaç kişi yaşıyordunuz:

8. Yurt odanızı nasıl değerlendiriyorsunuz? : ☐ Küçük ☐ Orta ☐ Büyük

Lütfen aşağıda verilen cümlelerin her biri ile ilgili görüşünüzü, ilgili ölçek üzerinde en iyi yansıtan kutucuğu işaretleyerek belirtiniz.

Örnek İşaretleme: Cümle sizin görüşünüzle örtüşüyorsa, “Katılıyorum” seçeneğini şekildeki gibi daire içine alınız

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	--------------------	------------------------

9. Yurt odamı genel olarak yeterli buluyorum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

10. Yurt odamın aldığı gün ışığını yeterli buluyorum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

11. Yurt odamdaki mahremiyet (privacy) seviyesinden memnunum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

12. Yurt odamın koridordaki konumundan memnunum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

13. Yurt odamı ferah buluyorum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

14. Yurt odamın bulunduğu kattaki mahremiyet (privacy) seviyesinden memnunum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

15. Bu yurttta genel olarak kalabalıklık hissi yaşıyorum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

16. Yurt oda arkadaşım/arkadaşlarımla aynı anda odada vakit geçirmek beni rahatsız ediyor.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

17. Yurt odam benim için önemlidir.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

18. Yurt oda arkadaşım/arkadaşlarımla iyi anlaşıyorum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

19. Pencereden görülen manzaradan memnunum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

20. Yurt oda arkadaşım/arkadaşlarımla aynı anda odada vakit geçirmek bende kalabalıklık hissi yaratıyor.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

21. Yurt odamdan memnunum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

22. Yurdumdan memnunum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

23. Okulumdan memnunum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

24. Genel olarak hayatımdan memnunum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

25. Akademik olarak kendimi başarılı buluyorum.

Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
-------------------------	--------------	------------	-------------	------------------------

Örnek İşaretleme: Cümlede konusu geçen durumu ender olarak yaşıyorsanız, "Nadiren" seçeneğini şekildeki gibi daire içine alınız.

Hiç	Nadiren	Ara Sıra	Sıklıkla	Her Zaman
-----	---------	----------	----------	-----------

26. Yurt odamın çevresindeki seslerden rahatsız oluyorum.

Hiç	Nadiren	Ara Sıra	Sıklıkla	Her Zaman
-----	---------	----------	----------	-----------

27. Yurt odamda kalabalıklık hissi yaşıyorum.

Hiç	Nadiren	Ara Sıra	Sıklıkla	Her Zaman
-----	---------	----------	----------	-----------

28. Yurt odamda uyumak dışında da faaliyetlerde bulunuyorum (yemek yemek, ders çalışmak, arkadaşlarımla oturmak vs.).

Hiç	Nadiren	Ara Sıra	Sıklıkla	Her Zaman
-----	---------	----------	----------	-----------

29. Yurt odamın bulunduğu katta tanımadığım (bina dışından) kimselerle karşılaşıyorum.

Hiç	Nadiren	Ara Sıra	Sıklıkla	Her Zaman
-----	---------	----------	----------	-----------

30. Kattaki arkadaşlarımla iletişim halindeyim (selamlaşma, birlikte yemek yemek, bir şeyler ödünç verme/alma vs.)

Hiç	Nadiren	Ara Sıra	Sıklıkla	Her Zaman
-----	---------	----------	----------	-----------

31. Yurt oda arkadaşım/arkadaşlarımla aynı anda odada vakit geçiriyorum.

Hiç	Nadiren	Ara Sıra	Sıklıkla	Her Zaman
-----	---------	----------	----------	-----------

Bunlar dışında yurttaki yaşantınızla ilgili eklemek istedikleriniz:

APPENDIX C

SURVEY (ENGLISH)



This survey was conducted to provide scientific data for a study about dormitories in a master's thesis in Bilkent University, related to interior architecture and Environmental Design Departments. The data you give will not be used for any other purpose.

****The number of participants is one of the most important factors for the reliability of this scientific data; your help is most appreciated for my thesis.**

The survey itself only takes four minutes. I appreciate all your contributions to this study.

For your questions regarding this study: Email: dilara.kivancilkent.edu.tr

Please answer the questions.

1. Room Number:
2. Room Type: ☐ Single ☐ Double ☐ Triple ☐ Quad
3. Age?
4. Gender: ☐ W ☐ M
5. How many months did you stay in Bilkent University Dormitories?
6. Which one of these below defines the room you spent your time growing up?
Single Room ☐
Sharing room with one person ☐
Sharing room with two/and more people ☐
7. In the dwelling that you grew up in, how many people did you live with?
8. How do you evaluate your dormitory room? : ☐ Small ☐ Medium ☐ Large

Please sign the most appropriate answer for you amongst the sentences below with respect to your opinions and how strongly you agree or not for measurement.

Example: If the sentence complies with your opinions please circle the choice "I agree" as shown in the figure.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

9. I find my dormitory room sufficient in general.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

10. I find the day light in my dormitory room sufficient.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

11. I am satisfied with the privacy level in my dormitory room.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

12. I am satisfied with the location of my dormitory room.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

13. I find my dormitory room spacious.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

14. I am satisfied with the privacy level in floor which my room located.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

15. Generally, I feel crowding in my dormitory.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

16. I feel disturbed about spending time with friends in my dormitory room.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

17. My dormitory room is important for me.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

18. I live in harmony with my friends/dormitory friends.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

19. I am satisfied with the view of my window.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

20. I feel crowding when I spend time with friends in my dormitory room

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

21. I am satisfied with my dormitory room.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

22. I am satisfied with my dormitory.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

23. I am satisfied with my university.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

24. I am happy with my life generally.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
-------------------	----------	---------	-------	----------------

25. I find myself academically successful.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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Example: If you go through the case written in the sentence rarely, please circle the choice "seldom" as shown in the figure.

Never	Rarely	Sometimes	Often	Always
-------	--------	-----------	-------	--------

26. I am disturbed by noises around my dormitory room.

Never	Rarely	Sometimes	Often	Always
-------	--------	-----------	-------	--------

27. I feel crowding in my dormitory room.

Never	Rarely	Sometimes	Often	Always
-------	--------	-----------	-------	--------

28. In addition to sleeping, I also engage in some other activities in my dorm room

Never	Rarely	Sometimes	Often	Always
-------	--------	-----------	-------	--------

29. I encounter strangers on the dormitory floor.

Never	Rarely	Sometimes	Often	Always
-------	--------	-----------	-------	--------

30. I am in relation with my friends in the floor (greetings, eating together, lending/borrowing something etc.).

Never	Rarely	Sometimes	Often	Always
-------	--------	-----------	-------	--------

31. I share time with my dormitory friends in my (dorm) room.

Never	Rarely	Sometimes	Often	Always
-------	--------	-----------	-------	--------

Things you would like to add about your life in dormitory:

APPENDIX D

STATISTICS



Table D. 1. Distribution of participants' ratings for questions 9 to 25

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
Q9	34	50	28	79	9	2,90	1,225
Q10	25	54	25	85	11	3,02	1,192
Q11	22	42	32	89	15	3,17	1,172
Q12	18	30	33	102	17	3,35	1,115
Q13	54	60	40	41	5	2,42	1,162
Q14	21	28	42	103	6	3,23	1,072
Q15	30	50	43	60	17	2,92	1,221
Q16	2	13	17	58	50	4,01	0,993
Q17	2	8	13	105	72	4,19	0,802
Q18	2	1	15	66	56	4,24	0,783
Q19	20	47	48	59	26	3,12	1,201
Q20	18	27	25	47	23	3,21	1,291
Q21	29	34	53	79	5	2,99	1,118
Q22	15	27	45	96	17	3,37	1,062
Q23	3	6	22	114	55	4,06	0,8
Q24	6	16	48	101	29	3,66	0,928
Q25	9	19	59	91	22	3,49	0,967

Table D. 2. Distribution of participants' ratings for questions 26 to 31

	Never	Rarely	Sometimes	Often	Always	Mean	SD
Q26	24	27	73	65	11	3,06	1,078
Q27	11	28	52	58	51	3,55	1,172
Q28	4	20	41	81	54	3,81	1,011
Q29	10	15	38	79	58	3,80	1,094
Q30	26	50	71	48	5	2,78	1,033
Q31	2	12	27	84	15	3,70	0,828

Table D. 3. General correlation table

	1	2	3	4	5	6	7	8	9	10	11	12
1-Duration	1											
2-General Satisfaction	-,143	1										
3-Importance of room	-,007	,160	1									
4-Room Satisfaction	-,040	,726	,121	1								
5-Dormitory Satisfaction	-,150	,801	,203	,576	1							
6-School Satisfaction	-,108	,595	,139	,141	,270	1						
7-Academic Success	-,062	,179	-,007	-,063	,026	,228	1					
8-Pleasure	-,159	,850	,259	,755	,700	,416	,224	1				
9-Crowding	-,021	,484	,054	,439	,387	,168	,032	,552	1			
10-Privacy	-,077	,350	,075	,323	,312	,142	,045	,494	,478	1		
11-Relations w/ people	-,184	,163	,007	,180	,096	,077	,023	,206	,121	,093	1	
12-Shared time w/ people	,222	,132	,153	,077	,119	,088	,085	,190	,173	,099	,160	1

Table D. 4. The effect of gender differences on crowding

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
crowdedness	1	62	3,1290	,88020	,11178
	2	138	3,2228	,85104	,07245

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	95% Confidence Interval of the Difference	
									Lower	Upper
crowdedness	Equal variances assumed	,296	,587	-,713	198	,477	-,09379	,13150	-,35312	,16554
	Equal variances not assumed			-,704	114,043	,483	-,09379	,13321	-,35768	,17009

Table D. 5. The effect of gender differences on privacy

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
privacy	1	62	3,3656	,74342	,09441
	2	138	3,0821	,82323	,07008

Table D. 6. (cont'd)

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	95% Confidence Interval of the Difference		
								Lower	Upper	
privacy	Equal variances assumed	,271	,603	2,319	198	,021	,28347	,12224	,04242	,52452
	Equal variances not assumed			2,411	129,259	,017	,28347	,11758	,05083	,51610

Table D. 7. The effect of gender differences on general satisfaction

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
general_satisfaction	1	62	3,3306	,70823	,08995
	2	138	3,5996	,65174	,05548

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	95% Confidence Interval of the Difference		
								Lower	Upper	
general_satisfaction	Equal variances assumed	1,191	,276	-2,627	198	,009	-,26899	,10238	-,47089	-,06709
	Equal variances not assumed			-2,545	109,208	,012	-,26899	,10568	-,47844	-,05954

Table D. 8. The effect of family size on crowding

Descriptives								
Crowdedness								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1,00	38	3,2061	,87309	,14163	2,9192	3,4931	1,33	4,75
2,00	113	3,2212	,85896	,08080	3,0611	3,3813	1,00	4,75
3,00	49	3,1207	,86202	,12315	2,8731	3,3683	1,00	4,67
Total	200	3,1937	,85906	,06075	3,0740	3,3135	1,00	4,75

ANOVA					
Crowdedness					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,352	2	,176	,237	,789
Within Groups	146,508	197	,744		
Total	146,860	199			

Table D. 9. The effect of family size on general satisfaction

Descriptives								
general_satisfaction								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1,00	38	3,4276	,70449	,11428	3,1961	3,6592	1,75	4,50
2,00	113	3,5465	,69078	,06498	3,4177	3,6752	1,00	5,00
3,00	49	3,5153	,64025	,09146	3,3314	3,6992	2,00	4,75
Total	200	3,5163	,67951	,04805	3,4215	3,6110	1,00	5,00

ANOVA					
general_satisfaction					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,402	2	,201	,432	,650
Within Groups	91,483	197	,464		
Total	91,885	199			

Table D. 10. The effect of shared room in childhood on crowding

Descriptives								
crowdedness								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	112	3,2180	,88675	,08379	3,0520	3,3840	1,33	4,75
2	63	3,1733	,83860	,10565	2,9621	3,3845	1,00	4,50
3	25	3,1367	,81148	,16230	2,8017	3,4716	1,00	4,50
Total	200	3,1937	,85906	,06075	3,0740	3,3135	1,00	4,75

ANOVA					
crowdedness					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,174	2	,087	,117	,890
Within Groups	146,686	197	,745		
Total	146,860	199			

Table D. 11. The effect of shared room in childhood on general satisfaction

Descriptives								
general_satisfaction								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	112	3,5491	,71332	,06740	3,4155	3,6827	1,00	5,00
2	63	3,5198	,61451	,07742	3,3651	3,6746	1,75	4,75
3	25	3,3600	,68496	,13699	3,0773	3,6427	1,75	4,75
Total	200	3,5163	,67951	,04805	3,4215	3,6110	1,00	5,00

ANOVA					
general_satisfaction					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,732	2	,366	,791	,455
Within Groups	91,153	197	,463		
Total	91,885	199			

Table D. 12. The effect of family size on disturbed feelings of sparing time with friends in dormitory room

Descriptives								
CrowdedDisturbed								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1,00	28	4,18	,772	,146	3,88	4,48	2	5
2,00	74	4,11	1,015	,118	3,87	4,34	1	5
3,00	38	3,68	1,042	,169	3,34	4,03	2	5
Total	140	4,01	,993	,084	3,84	4,17	1	5

ANOVA					
CrowdedDisturbed					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5,540	2	2,770	2,887	,059
Within Groups	131,453	137	,960		
Total	136,993	139			

Table D. 13. The effect of family size on crowding feelings of sparing time with friends in dormitory room

Descriptives								
CrowdedRoom								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1,00	28	3,25	1,206	,228	2,78	3,72	1	5
2,00	74	3,19	1,321	,154	2,88	3,50	1	5
3,00	38	3,24	1,324	,215	2,80	3,67	1	5
Total	140	3,21	1,291	,109	3,00	3,43	1	5

ANOVA					
CrowdedRoom					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,102	2	,051	,030	,970
Within Groups	231,470	137	1,690		
Total	231,571	139			

Table D. 14. The effect of satisfaction level of dormitory room on crowding

Descriptives								
L_Crowded								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1,00	63	2,92	1,248	,157	2,61	3,24	1	5
2,00	53	3,51	1,085	,149	3,21	3,81	1	5
3,00	84	4,05	,917	,100	3,85	4,25	1	5
Total	200	3,55	1,172	,083	3,39	3,71	1	5

ANOVA					
L_Crowded					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	45,842	2	22,921	19,834	,000
Within Groups	227,658	197	1,156		
Total	273,500	199			

Table D. 15. The effect of satisfaction level of dormitory room on privacy

Descriptives								
PrivacyRoom								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1,00	63	2,68	1,119	,141	2,40	2,96	1	5
2,00	53	3,17	1,297	,178	2,81	3,53	1	5
3,00	84	3,52	1,000	,109	3,31	3,74	1	5
Total	200	3,17	1,172	,083	3,00	3,33	1	5

ANOVA					
PrivacyRoom					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	25,480	2	12,740	10,117	,000
Within Groups	248,075	197	1,259		
Total	273,555	199			

Table D. 16. The effect of room type on crowding

Group Statistics					
	RoomType	N	Mean	Std. Deviation	Std. Error Mean
crowdedness	1 person	60	3,3167	,90702	,11710
	2 person	60	3,0125	,73563	,09497

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	95% Confidence Interval of the Difference		
								Lower	Upper	
crowdedness	Equal variances assumed	,733	,394	2,017	118	,046	,30417	,15077	,00561	,60273
	Equal variances not assumed			2,017	113,177	,046	,30417	,15077	,00547	,60286

Table D. 17. The effect of room type on crowding

Group Statistics					
	RoomType	N	Mean	Std. Deviation	Std. Error Mean
crowdedness	3 person	40	3,5375	,92256	,14587
	4 person	40	2,9375	,76743	,12134

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	95% Confidence Interval of the Difference		
								Lower	Upper	
crowdedness	Equal variances assumed	3,299	,073	3,162	78	,002	,60000	,18974	,22225	,97775
	Equal variances not assumed			3,162	75,498	,002	,60000	,18974	,22206	,97794

Table D. 18. The effect of room type on privacy

Group Statistics

	RoomType	N	Mean	Std. Deviation	Std. Error Mean
privacy	1 person	60	3,4889	,74274	,09589
	2 person	60	3,0556	,80527	,10396

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	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	,406	,525	3,064	118	,003	,43333	,14143	,15327	,71340
Equal variances not assumed			3,064	117,237	,003	,43333	,14143	,15325	,71342

Table D. 19. Effect on room type on privacy

Group Statistics

	RoomType	N	Mean	Std. Deviation	Std. Error Mean
privacy	3 person	40	3,1583	,89947	,14222
	4 person	40	2,8750	,66533	,10520

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	95% Confidence Interval of the Difference	
									Lower	Upper
privacy	Equal variances assumed	4,595	,035	1,602	78	,113	,28333	,17690	-,06884	,63551
	Equal variances not assumed			1,602	71,845	,114	,28333	,17690	-,06932	,63599

Table D. 20. Effect of room type on general satisfaction

Group Statistics					
	RoomType	N	Mean	Std. Deviation	Std. Error Mean
general_satisfaction	1 person	60	3,5208	,72236	,09326
	2 person	60	3,4292	,64946	,08385

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	95% Confidence Interval of the Difference
									Lower Upper
general_satisfaction	Equal variances assumed	,767	,383	,731	118	,466	,09167	,12541	-,15667 ,34001
	Equal variances not assumed			,731	116,689	,466	,09167	,12541	-,15670 ,34003

Table D. 21. Effect of room type on general satisfaction

Group Statistics					
	RoomType	N	Mean	Std. Deviation	Std. Error Mean
general_satisfaction	3 person	40	3,7813	,55812	,08825
	4 person	40	3,3750	,71611	,11323

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	95% Confidence Interval of the Difference
									Lower Upper
general_satisfaction	Equal variances assumed	2,712	,104	2,830	78	,006	,40625	,14355	,12045 ,69205
	Equal variances not assumed			2,830	73,609	,006	,40625	,14355	,12019 ,69231

Table D. 22. The relationship between room evaluation and room type

RoomType * RoomEvaluation Crosstabulation						
			RoomEvaluation			Total
			1	2	3	
RoomType	1 person	Count	42	18	0	60
		Expected Count	37,5	20,7	1,8	60,0
	2 person	Count	56	3	1	60
		Expected Count	37,5	20,7	1,8	60,0
	3 person	Count	13	25	2	40
		Expected Count	25,0	13,8	1,2	40,0
	4 person	Count	14	23	3	40
		Expected Count	25,0	13,8	1,2	40,0
Total	Count	125	69	6	200	
	Expected Count	125,0	69,0	6,0	200,0	

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	56,366a	6	,000
Likelihood Ratio	64,149	6	,000
Linear-by-Linear Association	27,296	1	,000
N of Valid Cases	200		

a. 4 cells (33,3%) have expected count less than 5. The minimum expected count is 1,20.

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,365	,000
	Cramer's V	,365	,000
N of Valid Cases		200	

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table D. 23. The relationship between room evaluation and gender

Gender * RoomEvaluation Crosstabulation						
		RoomEvaluation			Total	
		1	2	3		
Gender	1	Count	55	7	0	62
		Expected Count	38,8	21,4	1,9	62,0
	2	Count	70	62	6	138
		Expected Count	86,3	47,6	4,1	138,0
Total		Count	125	69	6	200
		Expected Count	125,0	69,0	6,0	200,0

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26,602a	2	,000
Likelihood Ratio	30,859	2	,000
Linear-by-Linear Association	25,345	1	,000
N of Valid Cases	200		

a. 2 cells (33,3%) have expected count less than 5. The minimum expected count is 1,86.

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,365	,000
	Cramer's V	,365	,000
N of Valid Cases		200	

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table D. 24. The relationship between room evaluation and crowding level of dormitory room

Descriptives								
L_Crowded								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	125	3,37	1,228	,110	3,15	3,59	1	5
2	69	3,84	1,024	,123	3,59	4,09	1	5
3	6	4,00	,894	,365	3,06	4,94	3	5
Total	200	3,55	1,172	,083	3,39	3,71	1	5

ANOVA					
L_Crowded					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11,182	2	5,591	4,199	,016
Within Groups	262,318	197	1,332		
Total	273,500	199			

Table D. 25. The relationship between room evaluation and privacy level of dormitory room

Descriptives								
PrivacyRoom								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1	125	3,10	1,243	,111	2,88	3,32	1	5
dura	69	3,35	,997	,120	3,11	3,59	1	5
3	6	2,33	1,211	,494	1,06	3,60	1	4
Total	200	3,17	1,172	,083	3,00	3,33	1	5

ANOVA					
PrivacyRoom					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6,921	2	3,461	2,557	,080
Within Groups	266,634	197	1,353		
Total	273,555	199			

Table D. 26. The Factors that Influencing General Satisfaction

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,855 ^a	,731	,727	,35515

a. Predictors: (Constant), crowdedness, privacy, pleasure

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67,163	3	22,388	177,492	,000 ^b
	Residual	24,722	196	,126		
	Total	91,885	199			

a. Dependent Variable: general_satisfaction

b. Predictors: (Constant), crowdedness, privacy, pleasure

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-,327	,172		-1,899	,059
	pleasure	1,169	,063	,874	18,667	,000
	privacy	-,090	,037	-,107	-2,401	,017
	crowdedness	,042	,037	,053	1,146	,253

a. Dependent Variable: general_satisfaction

Table D. 27. The Factors that Influencing Crowding

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,603a	,364	,354	,69021

a. Predictors: (Constant), privacy, general_satisfaction, pleasure

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53,488	3	17,829	37,426	,000b
	Residual	93,372	196	,476		
	Total	146,860	199			

a. Dependent Variable: crowdedness

b. Predictors: (Constant), privacy, general_satisfaction, pleasure

Table D. 28. (cont'd)

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1					
(Constant)	-,081	,338		-,240	,810
pleasure	,516	,199	,305	2,589	,010
general_satisfaction	,159	,138	,125	1,146	,253
privacy	,301	,070	,283	4,268	,000

a. Dependent Variable: crowdedness