

# SATISFACTION IN A DORMITORY BUILDING

## The Effects of Floor Height on the Perception of Room Size and Crowding

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**ABSTRACT:** This article examines the effects of floor height on the perception of room size and crowding as an important aspect of satisfaction with a dormitory building. The analysis was carried out by means of a survey research designed for dormitory residents at Bilkent University, Ankara. Two 5-story dormitory buildings, one housing men and the other women, in which all rooms are of identical size and have equal density, were chosen for the survey. The highest (fifth) and the lowest (ground) floor were included in this research with a sample of an equal number of male and female students for each. As predicted, residents on the highest floor perceive their rooms as larger and feel less crowded than residents of the lowest floor. Overall, when the room is perceived as larger and the feeling of privacy in a room increases, the satisfaction with a dormitory room also increases.

**Satisfaction of users** in the built environment is particularly important when the duration of staying is long. Although home is the best example of long-term environment, public spaces such as dormitories and residences for the elderly are other notable cases in which various aspects of interaction between user and environment can be investigated. Their public nature makes user satisfaction a harder goal to achieve for builders and organizers.

Although studies have been conducted in university dormitory buildings as residential settings (Baum, Davis, & Valins, 1979; Mandel, Baron, & Fisher, 1980; Schiffenbauer, 1979; Schiffenbauer, Brown, Perry, Shulack, & Zanzola, 1977; Walden, Nelson, & Smith, 1981), aspects covered need to be extended with further empirical studies. This study measures the effects of a physical characteristic—floor height—on the perception of room size and crowding in a university dormitory. It is assumed that the perception of room size and crowding influence the privacy level and satisfaction of users.

Altman (1975) proposed that crowding occurs when an individual has more social contact than is desired. Westin (1970) defined privacy as the ability to determine the information about oneself that is communicated to others. Westin suggested that there are four basic types of privacy: solitude, intimacy, anonymity, and reserve. Solitude reflects the desire to be alone and free from observation by others, whereas intimacy refers to a need for privacy as a member of a group seeking to form close personal relationships among its members. These two types of privacy are principally considered as they are the most relevant for this study.

Gifford (1987) supports the idea that increasing social density increases the feeling of being crowded in residential settings. Social contact is heightened, the same amount of resources must be distributed to a greater number of people, more physical interference is encountered, and the sense of control is reduced (Jain, 1987). Particularly when social density is undesirable, social outcomes are generally more negative, such as more aggression, less cooperation (Horn, 1990), and more social withdrawal (Sundstrom, 1975).

Social and physical factors affect the spatial perceptions of residents and the feeling of being crowded in dormitory buildings. The social factors include relationships with other residents and with the roommate, the activity taking place, the frequency of encountering strangers, the sharing of bedrooms, and personal characteristics such as sex, family size, and personal background, including the number of people sharing a bedroom at one's home. The physical factors include the room size, characteristics of design such as long or short corridors or suites, intensity of daylight in the room, view from the window, and floor height (Baum et al., 1979).

The effects of social density in a dormitory room were also examined by Walden et al. (1981). When three students had to share a bedroom designed for two, residents felt more crowded. According to Baum and Paulus (1987), students confronted with frequent unwanted interaction with their neighbors experience crowding and avoid contact with unacquainted people even outside of their residential environments.

Second, the physical factors affect the perception of space and crowding. Studies of high-rise dormitories show that when the design involves long

corridors as opposed to short corridors or suites, residents experience more crowding and stress (Baum et al., 1979). Long corridors are accompanied by greater competitiveness and social withdrawal and by reduced cooperativeness and lower personal control. In addition, living in a high-rise building may lead to a greater feeling of crowding and other negative attitudes such as less perceived control, safety, privacy, building satisfaction, and lower quality of relationships with other residents (McCarthy & Saegert, 1979).

It is also of interest that perception of crowding varies inversely with the brightness of a room. Mandel et al. (1980) indicates that dormitory rooms receiving more sunlight are perceived as less crowded. They suggest that crowding may be reduced by brightening a room with light colors or graphic designs on walls. Verderber (1986) established that people preferred rooms with windows to rooms lacking a window. In addition, the type of view, whether it is natural or man-made, affects this preference (Butler & Steuerwald, 1991) and personal moods (Stone, 1998). Tennessen and Cimprich (1995) found that university dormitory residents with more natural views from their windows had better performance on attentional measures than those with less natural views.

Among female students in a high-rise dormitory building, rooms on upper floors were perceived as larger than those on the lower floors (Schiffenbauer et al., 1977). Also, perceptions of crowding varied inversely with the brightness of the room. However, an important issue must be pointed out with regard to Schiffenbauer et al.'s (1977) results. That is, only female students participated in their study. Based on empirical research on crowding, it was anticipated that reactions exhibited by males might differ from those shown by females (Kaya, 1997; Rüstemli, 1992; Sears, Peplau, & Freedman, 1988). According to Stokols, Rall, Pinner, and Schopler (1973), males find crowded conditions more emotionally unpleasant than females. Thus, females and males may react to some environmental factors differently.

Moreover, Schiffenbauer (1979) showed that residents of higher floors felt less crowded than residents of lower floors did. This may be because fewer strangers venture to the upper reaches of a building or because views out the windows of higher level dwellings provide more visual expanse or visual escape to the residents than do lower level windows.

This study is designed to investigate the effects of floor height on spatial perceptions of both male and female residents and the feeling of being crowded in a dormitory building. In this research, the dependent variables are perceived room size, the feeling of being crowded, and satisfaction with the room; independent variables are the floor height and the sex of the resident.

## HYPOTHESES

To demonstrate the effects of floor height on the spatial perceptions of the residents and the feeling of being crowded in a dormitory room, the following hypotheses are used.

*Hypothesis 1:* Residents of the highest floor perceive the rooms as larger than residents of the lowest floor.

*Hypothesis 2:* Perception of room size influences the feeling of crowding and attained privacy.

*Hypothesis 3:* Residents of the highest floor feel less crowded in their rooms than residents of the lowest floor.

*Hypothesis 4:* Floor level influences overall satisfaction with the room.

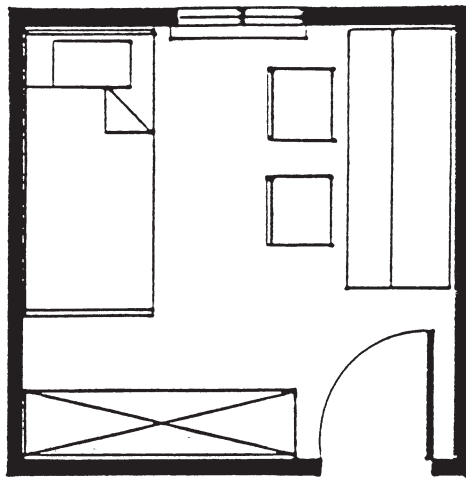
*Hypothesis 5:* There is a sex difference in the perception of room size and the feeling of being crowded.

## METHOD

### SETTING

The Bilkent University dormitory complex consists of 18 five-story buildings located on a hilltop near the main campus. Eight buildings house two residents in a room, whereas the rest of them either house a single person or are shared by three and four people. In choosing women's and men's dormitory buildings, some criteria were considered. First, only dormitory buildings that have double rooms were included. Therefore, all rooms have equal density. Second, one building houses men and the other women, and all rooms are of identical size. Third, the location of the two buildings with respect to each other is considered. Therefore, we chose women's and men's dormitory buildings that have the same views and visual expanse. Although the rooms are located on the south and north sides of the same dormitory building, their comparative locations are quite alike with similar views and visual expanses from their windows, in both buildings.

According to these criteria, two 5-story dormitory buildings with exactly the same design and configuration were selected. Thus, these two dormitory buildings not only have equal density but also identical room size ( $3.10 \times 2.95$  m). Each room consists of a bunk bed, a desk where two people can study, two chairs, and a wardrobe (see Figure 1).



**Figure 1: Floor Plan of the Dormitory Room (Scale: 1/50)**

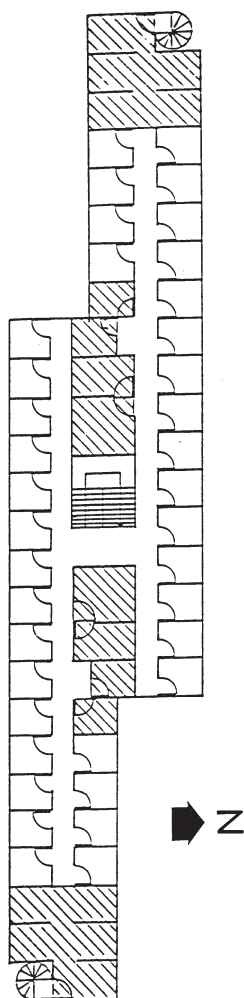
#### **PARTICIPANTS**

Of 670 people, the entire population of these two dormitory buildings at Bilkent University, 347 residents are men and 323 are women. Quota sampling was used in this research to obtain an equal number of males and females (Marriott, 1990; Vogt, 1993). To represent the entire population, 80 males and 80 females were sampled. Finally, as the primary concern of this research is to investigate the effects of floor height on the perceptions of room size and crowding, 40 residents of the fifth floor and 40 residents of the ground floor were included in each building.

#### **PROCEDURE**

On each floor in both dormitory buildings, a total of 38 dormitory rooms are located along two sides of the corridor (see Figure 2). At the time of this survey, some of the rooms were either empty or occupied by only one resident. The residents of those rooms were not included in the survey. Otherwise, the rooms were selected randomly within each floor height. All the participants volunteered with no refusals.

The questionnaire was administered for each room, to be completed individually by each student. It assessed the opinions of residents on the room size, satisfaction with the room, degree of privacy in the room, frequency of



**Figure 2: Floor Plan of the Dormitory Building**

NOTE: Shaded areas indicate semi-public spaces.

encountering strangers on the floor where the resident's room is located, getting along with roommate, frequency of other people (visitors, friends) visiting the room, degree of annoyance with the presence of others visiting the room, and demographic characteristics of the respondents such as years spent in school, duration of staying in a dormitory room and with roommate, the

number of people sharing a bedroom at home, and family size (see Appendix A for the questionnaire form).

Respondents were also asked their reasons for being satisfied or not with a dormitory room. The residents of the fifth and ground floors were asked to rank their reasons up to four choices. Both positive and negative reasons are grouped into 14 categories involving the physical aspects of the room, degree of privacy, and relations with roommate and visitors. The category named as *other* includes being comfortably hot and uncomfortably cold (see Appendix B and Appendix C for the distribution of positive and negative choices among the ground-floor and fifth-floor residents).

## ANALYSIS AND RESULTS

### PARTICIPANTS

The sample group consists of 37.5% freshmen, 30% sophomores, 22.5% juniors, and 10% seniors. Responses regarding the duration of staying in a dormitory room and of living with a particular roommate were the same: 41.9% less than 1 year, 37.5% about 1 to 2 years, and 20.6% more than 2 years. At home, 41.9% of the respondents had their own bedroom, 46.2% shared a bedroom with another person, and 11.9% shared a bedroom with more than one person. Half of the respondent group (50.0%) had a family size of 4 people; 13.8%, of 3 people; 22.5%, of 5 people; 9.4%, of 6 people, 3.1%, of 7 people; 0.6%, of 10 people, and 0.6%, of 12 people.

Here, it is necessary to mention the assignment procedure to dormitory buildings and to rooms, to have a further understanding of above-mentioned percentages. Students state their room preferences when they apply to stay in the dormitories. Because there are 18 buildings with different room characteristics, they indicate the room type—single, double, and more crowded rooms are available in different combinations in dormitories with different floor plans—dormitory building, and the friend(s) with whom they would like to share their room. The two dormitories selected for this research have exactly the same floor plan, with double rooms on each floor. Within buildings, regardless of their first choice, students are assigned randomly to available rooms, from the top level to the bottom.

To assure that males and females on different floors in our study were fairly equivalent, a series of chi-square analyses were run. Results showed that neither gender nor floor was related to family size, years of living in the dorm, or number of people sharing the bedroom at home. Family size

(grouped as 3, 4, and 5+ people) was tested against sex,  $\chi^2(2, N = 160) = 1.735$ . Number of years of living in the dorm was tested against the floor,  $\chi^2(2, N = 160) = 3.938$ , and sex,  $\chi^2(2, N = 160) = 4.627$ . Number of people sharing the bedroom at home was also tested against floor,  $\chi^2(2, N = 160) = 3.107$ , and sex,  $\chi^2(2, N = 160) = 2.108$ . All chi-square tests were insignificant,  $p > .05$ . Thus, student residents of the first and fifth floors appeared fairly equivalent because of their random assignment from top to bottom floors.

Although the students are given the opportunity to ask for a different room at the end of every academic year, the ratio of such demands is quite low (10%) and two-directional in terms of the desired floor. The main reason to both choose and change a room is the roommate. A slight tendency of moving to lower floors is observed after the first year of residence, the most frequently stated reason being easy access, as the buildings have no elevators. The same reason—easy access—is used to explain the moves toward upper floors, as the stairs cause crowding and noise at the entrance floor. It should also be noted that students can demand to move to other dormitories with single rooms or larger rooms for larger groups, which may be formed within the first years of dormitory residence. Students also leave the dormitories to live in houses. The standard and limited physical qualities of these two buildings serve students with similar backgrounds and expectations.

#### CHI-SQUARE TESTS

Perceived room size was measured as small, medium, and large. Because a categorical scale was used, the chi-square test was applied for data analysis.

For the first hypothesis, the relationship between the perception of room size and residence on the highest and lowest floors was significant,  $\chi^2(2, N = 160) = 6.52, p = .030$ . More residents on the fifth floor perceived their rooms as large (17.5%) than residents on the ground floor (5%). The results indicate that 70% of the fifth-floor residents perceived their room size as small, 12.5% as medium, and 17.5% as large. However, 77.5% of the residents of the ground floor perceived their rooms as small, 17.5% as medium, and 5% as large.

For the second hypothesis, the relationship between the perception of room size and the feeling of privacy was significant,  $\chi^2(2, N = 160) = 11.34, p = .003$ . When the room was perceived as larger, the feeling of privacy also increased, or vice versa. Among residents who perceived their room size as small, 60.2% reported sufficient privacy and 39.8% insufficient privacy. Among residents who perceived their room size as medium, 70.8% reported sufficient privacy and 29.2% insufficient privacy. However, all the residents (100%) who perceived their room size as large reported sufficient privacy in



their rooms, a result indicating a strong relationship between perceived room size and privacy level.

For the third hypothesis, the relationship between the feeling of privacy in a room and residence on the highest and lowest floors was significant,  $\chi^2(1, N = 160) = 13.52, p = .000$ . About 80% of the fifth-floor residents said they had sufficient privacy, and 20% did not, whereas 52.5% of the ground-floor residents said they had sufficient privacy and 47.5% did not.

In addition, the relationship between the overall satisfaction with a dormitory room and floor level was significant,  $\chi^2(1, N = 160) = 6.41, p = 0.010$ . Fifth-floor residents (62.5%) were more satisfied with their rooms than ground-floor residents (42.5%). The percentages of unsatisfied residents were 37.5% and 57.5% for the fifth and ground floors, respectively. However, due to the comprehensive character of this hypothesis, we need to develop certain subhypotheses to test the relationships between various factors used in this research, such as satisfaction and the perception of room size, satisfaction and the feeling of privacy, floor level and frequency of encountering strangers, and feeling of privacy and frequency of encountering strangers. The results of these tests are given below.

The relationship between satisfaction with a dormitory room and the perception of room size was also significant,  $\chi^2(2, N = 160) = 26.15, p = 0.000$ . The results indicate that, when the room was perceived as larger, satisfaction also increased, or vice versa. Among residents who were dissatisfied with their rooms, 92.1% perceived the room size as small, 6.6% as medium, and 1.3% as large. For the satisfied residents, the percentages were 57.2%, 22.6%, and 20.2% respectively, indicating a relationship between perceived room size and satisfaction.

The relationship between satisfaction with a dormitory room and the feeling of privacy was also significant,  $\chi^2(1, N = 160) = 37.74, p = 0.000$ . The results indicate that when the feeling of privacy in a room increased, satisfaction also increased. Among residents who were satisfied with their rooms, 88.1% reported sufficient privacy, and only 11.9% reported insufficient privacy. Among residents who were dissatisfied with their rooms, 57.9% had insufficient privacy, and 42.1% had sufficient privacy.

Moreover, the relationship between floor level and the frequency of encountering strangers on the resident's floor was investigated. Encountering strangers is considered as an indication of feeling crowded and losing privacy based on the results of previous research. Results were significant,  $\chi^2(2, N = 160) = 42.38, p = 0.000$ . The results indicate that 46.2% of the fifth-floor residents never encountered strangers, 42.5% sometimes, and only 11.3% frequently. In contrast, only 10% of residents of ground floors never encountered strangers, 35% sometimes, and 55% frequently.

The relationship between the feeling of privacy and the frequency of encountering strangers on the floor was also significant,  $\chi^2(2, N = 160) = 33.75$ ,  $p = 0.000$ . Residents who frequently encountered strangers claimed that they did not have sufficient privacy in their dormitory rooms. Among residents who said they had insufficient privacy, 63% frequently, 25.9% sometimes, and 11.1% never encountered strangers. However, among residents who said they had sufficient privacy, 17.9% frequently, 45.3% sometimes, and 36.8% never encountered strangers.

Last, for the fifth hypothesis, the perception of room size was significantly related to sex,  $\chi^2(2, N = 160) = 7.88$ ,  $p = .010$ . About 65% of male residents perceived their room size as small, 17.5% as moderate, and 17.5% as large; whereas 82.5% of female residents perceived their room size as small, 12.5% as moderate, and only 5% as large. Although both male and female residents found their room size small, more females perceived their rooms as small than males. However, the perception of room size could not be statistically tested against sex of the highest and lowest floor residents, due to the limited number of observations in a few room-size categories. Moreover, the relationship between the feeling of privacy and sex was significant,  $\chi^2(1, N = 160) = 16.10$ ,  $p = .000$ . More males (81.2%) said they had sufficient privacy in their rooms than females (51.2%). About 18.8% of male residents said they had insufficient privacy in their rooms, whereas 48.8% of females reported insufficient privacy. The relationship between floor level and the feeling of privacy in a room was also significant,  $\chi^2(3, N = 160) = 30.07$ ,  $p = 0.000$ . Female residents of the ground floor (65%) said they had insufficient privacy in their rooms more frequently than male residents (30%) of the same floor. Also, more female residents on the fifth floor (32.5%) said they had insufficient privacy in their rooms, compared to male residents (7.5%) of the same floor.

## DISCUSSION

The findings of this research yield strong support for the effects of floor height on the perception of room size and the feeling of crowding. In the current study, even though all the rooms were of the same size and had the same number of individuals living in them (were of equal density), residents of the highest and lowest floors had significantly different ratings of perceived room size and crowding. Residents on the highest floor of the dormitory building perceived their rooms as larger, felt less crowded, and were more satisfied with their rooms than residents of the lowest floor.

These results are interesting for several reasons. First, they provide further empirical support for the effects of floor height on spatial perceptions and crowding in a dormitory building as a residential setting. The significant relationship between floor height and the perception of room size in this research may be because of the windows of higher level dormitory rooms, which provide more visual expanse to residents than lower level dormitory rooms. This study, furthermore, points out the relationship between the perception of room size and the feeling of privacy in a room. When the room size was perceived as larger, the feeling of privacy also increased. Moreover, the relationship between floor height and crowding indicates that density and crowding can be considered conceptually independent concepts. Proshansky, Ittelson, and Rivlin (1970) and Stokols (1972) have established the necessity of viewing density and crowding as different phenomena, which is supported by this research. The finding that there is a significant difference in crowdedness ratings with no variation in either physical or social density indicates that density is neither a necessary nor a sufficient condition for the perception of crowding to occur. This is clearly evident in the findings on floor height. As mentioned earlier, residents of the highest floor felt less crowded in their rooms than residents of the lowest floor. This may be because fewer strangers venture to the upper reaches of the dormitory building. Also, the findings of this research clearly support that residents of the lowest floor said they more frequently encountered strangers than residents of the highest floor. In addition, the frequency of encountering strangers may affect the feeling of privacy in a room. The findings show that residents who frequently encountered strangers also said they had insufficient privacy and felt more crowded in their dormitory rooms.

The relationship between satisfaction with a dormitory room and the floor height was also found to be statistically significant. Residents of the highest floor were more satisfied with their rooms than residents of the lowest floor. The main reasons for not being satisfied among ground-floor residents were the negative physical aspects of the room, which were perceived as dark, narrow, and noisy, and frequent use of hallways. The noise level on the ground floor was louder than on the fifth floor. This may be as a result of more people using the ground floor. Both residents and visitors who go to the higher floors of the building use the staircase located on the ground floor, as it is the only access (note that these two dormitory buildings, both men's and women's, do not have any elevators). This may cause a problem for residents of the ground floor who want to sleep or study in their rooms. On the other hand, the important reasons for being satisfied with the dormitory room among fifth-floor

residents were the positive physical aspects of the room, which were perceived as wide, well-lit, and quiet. The results of this research have also supported that satisfaction with a room is increased when the room is perceived as larger and the feeling of privacy is increased. Thus, residents who perceived their room as large and felt private in their room were more satisfied with their room, or vice versa.

As mentioned before, perception of room size and crowding were influenced by social factors, including relations with other residents and with roommate, and personal characteristics, such as sex, family size, and personal background including the number of people sharing a bedroom at one's home and whether the individual stays alone or shares a bedroom with others. However, these aspects need to be studied further to understand their impact. In this survey, only 5% of the sample group claimed that they could not get along with their roommate, females (3.1%) more than males (1.9%). This may be a result of selecting roommates before applying for a room. It is also interesting that the negative aspects of the dormitory room were mostly associated with physical qualities, whereas relations with roommates were generally positive. The few residents who could not get along with their roommates were not satisfied with their dormitory rooms. In addition, previous research suggests that sharing a residence with more people is correlated with a preference for less privacy (Marshall, 1972). This may be so because the residents who shared a bedroom at home with more than one person were used to living in crowded conditions, so that they might need less privacy than the ones who had a bedroom to themselves at home. Thus, to understand whether residents' personal background influenced their feelings of privacy in a dormitory room, they were asked how many people shared a bedroom at home. However, the chi-square results do not indicate any significant relationship,  $\chi^2(2, N=160) = 2.28, p = 0.318$ . Family size (grouped as 3, 4, and 5 or more), however, had a significant relationship with feeling of privacy,  $\chi^2(2, N=160) = 13.78, p = 0.000$ , whereas it appeared independent of the perception of room size,  $\chi^2(4, N=160) = 1.71, p = 0.790$ . This finding may indicate the effect of long-term crowding on the feeling of privacy, as the expectation of students for privacy differs according to the number of people at home. The number of people sharing a bedroom at home may appear independent because of getting along with the roommate, which also appeared as an important cause of satisfaction in the dormitory room. In addition, the relation between the feeling of privacy and being annoyed with the presence of others, which could partly explain the differences among individuals, is found not to be independent,  $\chi^2(1, N=160) = 11.67, p = 0.001$ , as an indication of different effects of familiar and strange people on the perceived privacy level.

It was hypothesized that there would be a sex difference in the perception of room size and the feeling of crowding. Previous research performed in laboratory settings usually finds that males respond to high density more negatively than females; their mood, attitudes toward others, and social behavior are more negative. Females seem to handle the stress of density better than males (Gifford, 1987). However, the results of this study indicate that female residents, both at the highest and lowest floors, felt more crowded than male residents on the same floors do. Also, female residents perceived their rooms as smaller than male residents did, and male residents felt more private in their rooms than female residents did. Thus, the relationship between sex and the feeling of crowding supported the findings of Mandel et al. (1980). Their study provides evidence that women spend more time in their room, and they are more sensitive to the room's physical advantages and disadvantages than men.

There are certain limitations to the present study that should be taken into consideration when interpreting the findings. First, the results of the study are limited by the nature of the sample. The sample group includes only the residents of the two dormitory buildings, one housing men and the other women, at Bilkent University, in Ankara, Turkey. Further research could be carried out in other environments, such as office buildings, hospitals, school buildings, and so forth. Another limitation is that there may be many variations in terms of the personal characteristics of the residents, few of which could be tested in this study. Although this research provided evidence of a positive relationship between floor height and the perception of room size, further research is needed to understand the effects of daylight in a room and the view from the window on the perception of room size. Longitudinal designs with multiple measurements may be needed to provide more comprehensive information on this subject.

## APPENDIX A

### Questionnaire Form

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Sheet #:  
Dormitory #:  
Floor:  
Year:

1. How long have you been staying in your room?

- ☐ Less than one year
  - ☐ One to two years
  - ☐ More than two years
- 

*(continued)*

### APPENDIX A(continued)

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2. How long have you been staying with your roommate?
  - ☐ Less than one year
  - ☐ One to two years
  - ☐ More than two years
3. How many people did you share your bedroom with at home?
  - ☐ None
  - ☐ One
  - ☐ More than one
4. What is your family size?\_\_\_\_\_
5. Are you satisfied with your room?
  - ☐ Yes
  - ☐ No
6. Why?
  - ☐ Well-lit
  - ☐ Dark
  - ☐ Large
  - ☐ Small
  - ☐ Noisy
  - ☐ Quiet
  - ☐ Crowded
  - ☐ Privacy: Sufficient
  - ☐ Privacy: Insufficient
  - ☐ Relation with Roommate: Positive
  - ☐ Relation with Roommate: Negative
  - ☐ Relation with Visitors: Positive
  - ☐ Relation with Visitors: Negative
  - ☐ Other:\_\_\_\_\_
7. How do you find the size of your room?
  - ☐ Small
  - ☐ Medium
  - ☐ Large
8. How do you find the privacy level in your room?
  - ☐ Sufficient
  - ☐ Insufficient
9. How often do you encounter strangers on the floor level where your room is located?
  - ☐ Never
  - ☐ Sometimes
  - ☐ Frequently
10. Do you get along with your roommate?
  - ☐ Yes
  - ☐ No

11. How often do other people (visitors, friends) visit your room?
    - ☐ Never
    - ☐ Sometimes
    - ☐ Frequently
  12. Do you get annoyed with the presence of others when they visit your room?
    - ☐ Never
    - ☐ Sometimes
    - ☐ Always
  13. Why?
    - ☐ Room size
    - ☐ Noise
    - ☐ Impacts on other activities (studying, sleeping)
    - ☐ Interactions with others
-

APPENDIX B  
Reasons for Being Satisfied or Not With a Dormitory Room and the Priorities for Each Reason Among Ground-Floor Residents

	First	Percentage	Second	Percentage	Third	Percentage	Fourth	Percentage	n
Positive responses									
Light	7	8.8	2	2.5					9
Wide	2	2.5	2	2.5					4
Quiet	4	5.0	3	3.8	2	2.5			9
Privacy: Sufficient	11	13.8	5	6.3	3	3.8			19
Relation with roommate, positive	8	10.0	8	10.0	3	3.7	1	1.3	20
Relation with visitors, positive			1	1.3			2	2.5	3
Negative responses									
Dark	5	6.3	6	7.5	4	5.0			15
Narrow	29	36.2	6	7.5	1	1.3			36
Noisy	8	10.0	6	7.5	4	5.0			18
Crowded	5	6.3	9	11.3	4	5.0			18
Privacy: Insufficient	2	2.5	4	5.0	4	5.0			10
Relation with roommate, negative			1	1.3	1	1.3			1
Relation with visitors, negative					1	1.3			2
Other			1	1.3					1

NOTE: First, second, third, and fourth indicate the respondent's rank for each reason.



**APPENDIX C**  
**Reasons for Being Satisfied or Not With a Dormitory Room and the Priorities for Each Reason Among Fifth-Floor Residents**

	<i>First</i>	<i>Percentage</i>	<i>Second</i>	<i>Percentage</i>	<i>Third</i>	<i>Percentage</i>	<i>Fourth</i>	<i>Percentage</i>	<i>n</i>
Positive responses									
Light	18	22.5	6	7.5	4	5.0			28
Wide	6	7.4	5	6.3	5	6.3	4	5.0	20
Quiet	10	12.5	14	17.5	4	5.0			28
Privacy: Sufficient	6	7.5	7	8.7	3	3.8			16
Relation with roommate, positive	9	11.3	5	6.3	7	8.7	1	1.3	22
Relation with visitors, positive			1	1.3	2	2.5	2	2.5	5
Negative responses									
Dark	1	1.3	1	1.3	4	5.0			6
Narrow	25	31.3	4	5.0	1	1.3			30
Noisy	1	1.3	5	6.3					6
Crowded					1	1.3			1
Privacy: Insufficient	1	1.3	1	1.3					2
Relation with roommate, negative	2	2.5			1	1.3			3
Relation with visitors, negative									
Other	1	1.3	4	5.0					5

## REFERENCES

- Altman, I. (1975). *The environment and social behavior*. Monterey, CA: Brooks/Cole.
- 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., & Paulus, P. B. (1987). Crowding. In I. Altman & D. Stokols (Eds.), *Handbook of environmental psychology* (pp. 533-570). New York: Wiley-Interscience.
- Butler, D. L., & Steuerwald, B. L. (1991). Effects of view and rooms size on window size preferences made in models. *Environment & Behavior*, 23, 334-358.
- Gifford, R. (1987). *Environmental psychology: Principles and practice*. Boston: Allyn.
- Horn, J. L. (1990). Crowding. In R. Corsini (Ed.), *Encyclopedia of psychology* (pp. 365-366). New York: John Wiley.
- Jain, U. (1987). Effects of population density and resources on the feeling of crowding and personal space. *Journal of Social Psychology*, 127, 331-338.
- Kaya, N. (1997). *The effects of short-term crowding on personal space: A case study on an Automatic Teller Machine*. Unpublished master's thesis, Bilkent University, Ankara, Turkey.
- Mandel, D. R., Baron, R. M., & Fisher, J. D. (1980). Room utilization and dimensions of density: Effects of height and view. *Environment & Behavior*, 12, 308-319.
- Marriott, F. H. C. (1990). *A dictionary of statistical terms* (5th ed.). New York: John Wiley.
- Marshall, N. J. (1972). Privacy and environment. *Human Ecology*, 1, 93-110.
- McCarthy, D. P., & Saegert, S. (1979). Residential density, social overload, and social withdrawal. In J. R. Aiello & A. Baum (Eds.), *Residential crowding and design* (pp. 55-77). New York: Plenum.
- Proshansky, H. M., Ittelson, W. H., & Rivlin, L. G. (1970). *An introduction to environmental psychology*. New York: Holt.
- Rüstemli, A. (1992). Crowding effects of density on interpersonal distance. *Journal of Social Psychology*, 132, 51-58.
- Schiffenbauer, A. I. (1979). Designing for high density living. In J. R. Aiello & A. Baum (Eds.), *Residential crowding and design* (pp. 229-240). New York: Plenum.
- 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.
- Sears, O. D., Peplau, A., & Freedman, J. (1988). *Social psychology*. Englewood Cliffs, NJ: Prentice Hall.
- Stokols, D. (1972). On the distinction between density and crowding: Some implications for further research. *Psychological Review*, 79, 275-277.
- Stokols, D., Rall, M., Pinner, B., & Schopler, J. (1973). Physical, social, and personal determinants of the perception of crowding. *Environment & Behavior*, 5, 87-115.
- Stone, N. J. (1998). Windows and environmental cues on performance and mood. *Environment & Behavior*, 30, 306-321.
- Sundstrom, E. (1975). An experimental study of crowding: Effects of room size, intrusion, self-disclosure, and self-reported stress. *Journal of Personality and Social Psychology*, 32, 645-654.
- Tennessen, C. M., & Cimprich, B. (1995). Views to nature: Effects on attention. *Journal of Environmental Psychology*, 15, 77-85.
- Verderber, S. (1986). Dimensions of person-window transactions in the hospital environment. *Environment & Behavior*, 18, 450-466.

- Vogt, W. P. (1993). *Dictionary of statistics and methodology*. Newbury Park, CA: Sage.
- Walden, T. A., Nelson, P. A., & Smith, D. E. (1981). Crowding, privacy, and coping. *Environment & Behavior*, 13, 205-224.
- Westin, A. F. (1970). *Privacy and freedom*. New York: Atheneum.