An Investigation on Residential Satisfaction in Mass Housing: A Case Study of Garanti Houses in Konya-Turkey

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1   ABSTRACT

In due course, the changing culture, technological developments have continually presented new dimensions to shelter. All the quests and new solutions to housing have aimed to satisfy the users. Housing evaluation is a field that determines whether the housing fulfils the necessary conditions for the users' mental and physical health, whether the users would be content as individuals and as families, and whether the big housing investments would go down the drain. The mistakes in housing practices are constantly repeated. Housing evaluations have recently gained great importance in order to evade these inaccuracies. This study tackles user satisfaction in mass housing systems. The field of study is Garanti Houses, the largest mass housing in gated community-style in Konya. User satisfaction with inner and outdoor spaces is investigated and evaluated by means of user satisfaction questionnaires. Eventually, it is found out that the inhabitants of Garanti Houses are satisfied with the social facilities and the indoor and outdoor spaces of the housing complex, and with their locations at levels good and very good. It is believed that the findings to be obtained in this study will provide data for a participatory planning approach to the processes of planning of future mass housing projects.

2   INTRODUCTION

Housing is a place or a space in which a product, a process, an identity, an individual value and status are expressed (Rapoport, 1980). Housing is the tiniest component of the environment with certain physical and societal attributes (Peters, 1979). Rapoport emphasizes that housing is a phenomenon affected by the culture of a society, rather than a shelter or structure (Rapoport, 1969). The spaces that societies inhabit are shaped by their social structure and culture. Housing is a vastly complicated phenomenon that accommodates the continuity of a cultural form, socialization, and the sememic strata composed of shared values (Aydınlı, 2004).

Regardless of the scale, it is impossible to consider housing or built environment on a settlement scale independent of people, behaviour, preferences of a group and the ecological milieu to which it is adapted (Cimşit, 2004). Housing is always taken into consideration as a whole with the environment because it is the same individuals that form both housing and its environment.

Originally a means to fulfil the need for shelter, housing, in time, has developed in relation to the cultural changes. After the 1980s the image of "house" became a symbol of a privileged life, i.e. an object of popular culture indicating the social status and prestige of its owner (Yıldırım and Hidayetoğlu, 2008).

The concept mass housing initially emerged as a result of the projects that aimed at producing many housing at once for low and middle income individuals by public or private institutions (Tapan, 1996). Especially after the 1980s, the rising mass housing in Turkey reached a diverse level due to the private enterprises involved. The private enterprises started to produce new housing complexes for families with middle or upper-middle income and high level of education. Thus, the process of displacement from the inner city housing areas to the fringe has commenced in line with the quest for the quality of housing and living environment of the users (Akar and Başkaya, 2004).

The first examples of multi storey housing were produced after the Industrial Revolution. The migration to the industrial areas which emerged due to these developments caused a severe housing shortage (Ulusoy, 2006). The solution to this problem was multi storey housing, that is, apartment blocks. The apartment

blocks were for some period housing for the middle class and working class, which became apparent in the societies of the Industrial Revolution (Kıray, 1979). On the other hand, in Turkey, the first apartment blocks found approval from the notable citizens of the cities (Yavuz, 1979). The introduction of the property ownership law in 1965 in Turkey changed the pace of the development of the apartment blocks (Balamir, 1992). Moreover, the approval of the property ownership law brought about a new dimension to housing ownership. Build-and-sell system carried out via contractors accelerated housing acquisition process (Işık, 1994).

The busy working life nowadays has limited the time devoted to leisure time. Moreover, the increase in the crime rates, especially in the big cities, people prefer inhabiting housing that provides security. The recent mass housing examples are designed in a way that would enable the inhabitants to perform leisure activities in an environment close to their houses. Similar to Konya, also in other big cities in Turkey these kinds of practices are favored.

3   STUDIES OF RESIDENTIAL EVALUATION

Despite the differences in the processes of historical and societal development, the mass housing practices in Turkey generally repeat the mistakes seen in the Western societies (Üstün, 2004). In time, the amount of the multi storey ordinary structures has increased and the inhabitants have been discontent about the living environment. For other several similar reasons, residential evaluation has come into prominence. Residential evaluation studies will avoid the potential mistakes and ensure that correct investments will be made (Ağat, 1968).

The dwellings that are under evaluation provide the necessary information for a feedback based on the existing dwellings for the future projects (Preiser, 1989). Moreover, they would prove useful for the decisions to be made for the future housing projects. Evaluation of residential performance renders responsible managers of housing construction, politicians and designers (Amole, 2009).

In line with the necessity to develop the criteria for the evaluation of residential performance, several performance indicators have been proposed. Although there are several criteria, the concept satisfaction has become the most common concept in residential evaluation. Galster defines "satisfaction" as the gap between the existent and the expectation of the consumer (Galster, 1987). In the performance evaluation of all the dwelling types, the concept satisfaction has been primarily used (Aragones et al., 2002; Francescato et al., 1979, 1989; Jagun et al., 1990; Kellekc and Berkoz, 2006; Paris and Kangari, 2005; Wiedemann and Anderson, 1985).

User satisfaction is considered a useful criterion in residential evaluation because it demonstrates the general level of success, the influential and cognitive answers of the users; it points out the tedious aspects of residential environments and it predicts the answers of the users for the future environments. Moreover, it is believed that satisfaction is an indicator of the quality of life, wellbeing and happiness (Elyes and Wilson, 2005; Mccrea et al., 2005).

4   RESEARCH METHOD

4.1 Research Settings

Konya is a city in middle Anatolia (Figure 1) whose archeological findings date back to 9000 B.C. (Hodder, 1996). The mass housing examples in Konya are composed of detached housing with gardens. These were constructed between 1965 and 1975, generally distant from the center and in squatter prevention areas (e.g: Aydınlık Evler). It is observed that the apartment blocks built after 1980 in Konya were grouped buildings composed of a few blocks, and the areas between the blocks were utilized with simple landscape arrangement. On the other hand, the newly-built apartment blocks following 2000s contain both housing groups and social facility areas. As an example of this kind of mass housing practice, Konya Garanti Houses is selected as the subject of this study. Garanti Houses is the largest building complex in Konya in these terms. The complex is located 20 km away from the city centre and in the north of Konya. The whole complex covers nearly 240.000 m^2.

Fig. 1: The location of Konya in Turkey.

The building complex is endowed with facilities such as indoor swimming pool, Turkish bath, sauna, cafeteria, fitness center, hairdressers, semi-open areas for diverse facilities, decorative pools, playgrounds, trekking and running tracks, cycle paths, aqua park, and parking areas including 2 lots for each flat. For all inhabitants of the complex, tennis and basketball courts, football fields, a mini zoo, restaurants, and a mini shopping mall are designed and all of these areas are equipped with security personnel.

The complex is composed of three housing groups called Merih, Venüs I and Venüs II. Each group has a vast recreation area in the middle and it is surrounded by the apartment blocks, which are surrounded by parking lots. Therefore, the connection of the recreation areas with the parking lots is evaded and the areas with benches were furnished with playgrounds.

The daily-use areas of all the dwellings are directed towards the social facility areas in the middle of the building complex, whereas the night-use areas to the parking lots. The apartment blocks are composed of 9 or 11-storey with two flats in each storey. The storey plan is the same for all floors. The use of circular forms in the masses brought about dynamism in the façades. The flats are designed in five different dimensions, that is, 150 m^2, 165 m^2, 200 m^2, 220 m^2, and 290 m^2 and all the blocks share the same main idea. Each flat has its own combination boiler for heating.

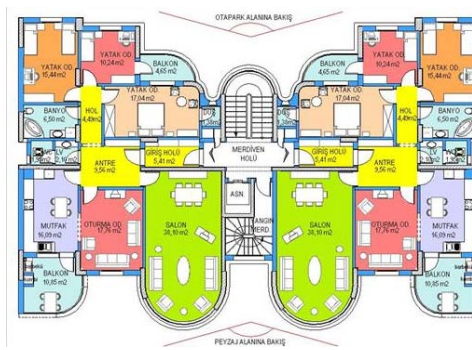

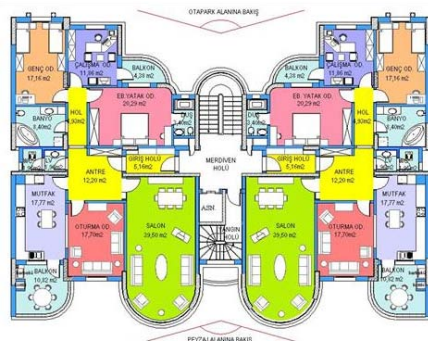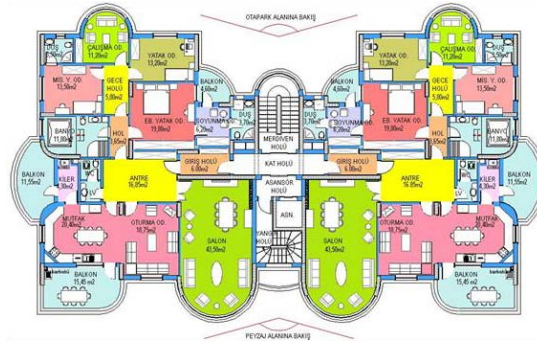Fig. 2: General view of Garanti Houses, the subject of the study.

Layout Plan
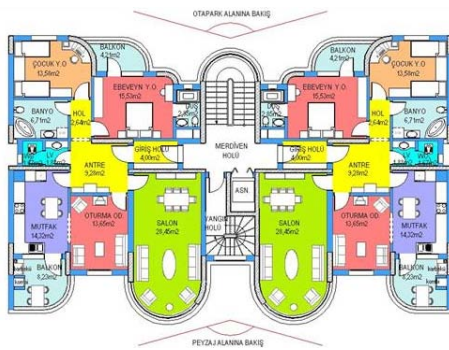
Normal floor plan of the 165m^2-block

Normal floor plan of the 200m^2-block

Normal floor plan of the 220m^2-block

Normal floor plan of the 290m^2-block

Fig. 3: The layout and floor plans of Garanti Houses

4.2 Respondents

Garanti Houses is composed of 35 apartment blocks and, in total, 736 flats. Among the 736 flats, 502 are inhabited. Except for the children, there are 1003 adult inhabitants. The sample of this research is composed of 136 adult inhabitants (13.6% of all the inhabitants) of Garanti Houses. The sample of the research is136 adults were randomly selected among those who were present in their dwellings at the date of the survey. 58% of the sample are female and 42% are male, among which 75% are either state officials or self-employed; 56% are graduates; 92% are married. Moreover, the ages of the users vary between 20 and 60 and the mean age is 37.6.

4.3 Questionnaire Design and Data Analysis

The goal of the survey was to determine the level of user satisfaction concerning attributes of the housing. The questionnaire is occurred from three parts. The first section covers demographic information (gender, age, education, occupation, family size, ownership, secondary housing), whereas the second is composed of 5-likert scale questions about indoor areas and outdoor areas, respectively. The questions are prepared in order to examine the general level of user satisfaction with the housing attributes; and the level of

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satisfaction with the indoor areas (plan organization, furniture features etc.) and the outdoor areas (neighbourhood relations, appearance of house environment, insulation, social facility, air quality, noise, traffic etc.), separately, according to their gender, age, and level of education. The final section addresses the qualities of houses and the psychosocial characteristics of their users.

5 RESULTS

5.1 The general level of user satisfaction with housing attributes

The study first tackled the general level of user satisfaction with the housing attributed. The general level of satisfaction was investigated under two headings: (1) indoor spaces, (2) outdoor spaces. Table 1 presents the descriptive statistics of the general level of user satisfaction with indoor spaces, whereas Table 3 presents those of the general level of user satisfaction with outdoor spaces.

n	$\bar{x}$	Std. Dev.	Min.	Max.	Total Point	Item Number	Positive Attitude $\bar{x}=3,41-5,00$	
							F	%
136	4,10	,68	1,61	5,00	557,42	32	111	80,9

Table 1: The General Level of User Satisfaction with Indoor Housing Attributes.

Observing the general level of user satisfaction with the indoor spaces, it is seen that there are some who are totally dissatisfied (min=1.61) along with those who are totally satisfied (max=5.00). The total score of the level of user satisfaction is found out to be 557.42. The mean scores of the level of satisfaction show that the mean level of satisfaction is $\bar{x}=4.10$, reflecting the opinion "I am satisfied". When the rate of the users who scored above the mean is examined, it could be asserted that 111 participants out of 136; that is, 80.9%, have positive opinions about the housing attributes.

In the evaluation of indoor housing attributes; whereas the presence of a space for shoe cabinets ($\bar{x}=4,52$), location of the bathroom ($\bar{x}=4,47$), for the kitchen sink to have a garden view and to be in front of a window ($\bar{x}=4,47$), location of the kitchen ($\bar{x}=4,44$) and orientation of rooms ($\bar{x}=4,36$) were among the main factors increasing user satisfaction; the factors ranked at the bottom were the distance of the building complex to the city center, houses' insulation against cold and neighbour relations.

Distance of the building complex to the city center	Location of the kitchen
Insulation against cold	For the kitchen sink to have a garden view and to be in front of a window
Neighbour relations	Location of the master bedroom
Security system	Size of the master bedroom
Circularity in the facade	Size of the bathroom
Orientation of the rooms	Location of the bathroom
Sunlight receiving	Size of the living room
Dimensions of windows	Location of the living room
Closeness of windows to the ground	Circularity in the living room
Plan scheme and its usefullness	Size of the living room
Having space between the living room and the kitchen	Size of the entrance hall
Appearance	Presence of a space for shoe cabinets
Comfort	Size of the space for shoe cabinets
Size of the balcony	Use and location of shoe cabinets
Number of balconies	Location of the washbasin and the toilet
Size of the kitchen	Size and illumination of staircases
Use and location of kitchen cabinets	Usage and location of cloakroom cabinets

Table 2: Indoor Housing Attributes.

n	$\bar{x}$	Std.Dev.	Min.	Max.	Total Point	Item Number	Positive Attitude $\bar{x}$=3,50-5,00	
							F	%
136	4,08	,69	2,43	5,00	555,14	14	107	77,2

Table 3: The General Level of User Satisfaction with Outdoor Housing Attributes.

Observing the general level of user satisfaction with the indoor spaces, it is seen that there are some who are totally dissatisfied (min=2.43) along with those who are totally satisfied (max=5.00). The total score of the level of user satisfaction is found out to be 555.14. The mean scores of the level of satisfaction show that the mean level of satisfaction is $\bar{x}$=4.08, reflecting the opinion "I am satisfied". When the rate of the users who scored above the mean is examined, it could be stated that 107 participants out of 136; that is, 77.2%, have positive opinions about the housing attributes.

In the research, general level of users' satisfaction with housing attributes through the characteristics of outdoor spaces (Table 4), and it was observed that clean air (95%), spaciousness (89%) and abundance of green areas (87%) significantly increase user satisfaction.

Building quality	Sports facilities
Well-maintenance	Parking area
Respectability	Quietness
Security	Green areas
Originality	Spaciousness
Order	Clean air

Table 4: Outdoor Housing Attributes

5.2 The level of user satisfaction with housing attributes according to psycho- social features

In the next section of the study, the reasons the users preferred Garanti Houses were addressed with respect to the types of their previous houses. While 4,7% of the participants had their first houses in Garanti Houses, 16,5% of them moved from another housing complex, 21,3% from villa and 57,5% of them moved from an apartment block. In the graph below, the first five factors that were picked most among the choices given are presented. Security is the top factor that motivated people to move to Garanti Houses. It is thought that the finding that people who came from housing complexes and apartment blocks were motivated most by the availability of clean air and a traffic- and noise-free environment stemmed from the fact that such houses are located in the city center where air pollution and traffic density are high. It is also thought that social and sports facilities ranked among the first five reasons, because houses in the city center lack such facilities (Table 5). Since Garanti Houses had attracted a lot of demand due to these reasons, it has been observed that more recent mass housing projects both in downtown and uptown took into consideration these demands.
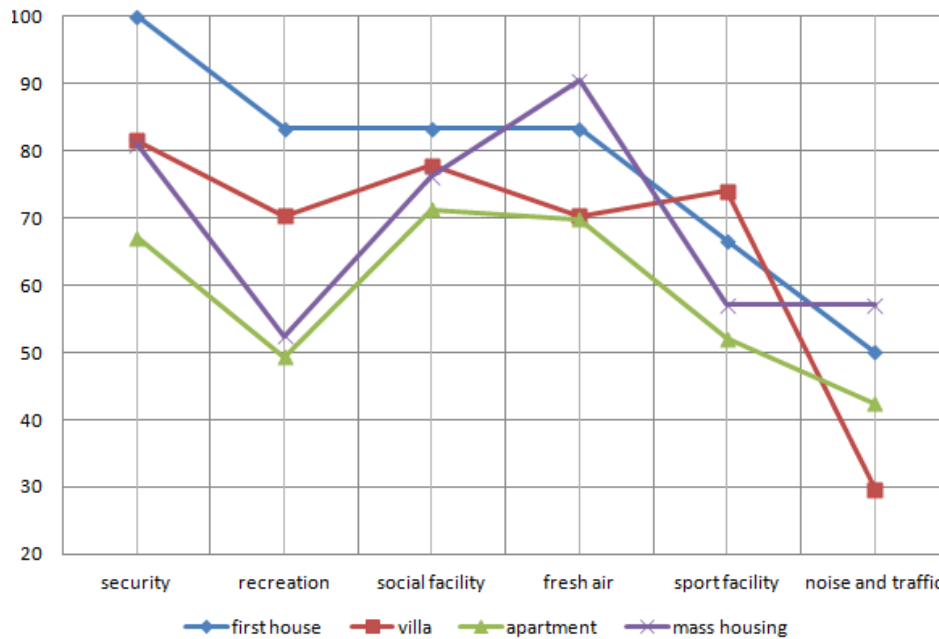
Table 5: Reasons of Users to Prefer Garanti Houses with respect to their Previous Houses

Although the users are satisfied with Garanti Houses in general, it was found that 73,6% of them would like to live in the Meram region and 10,4% of them would like to live on a traditional street. This stems from the facts that the urban texture in Meram is at the human scale, that the region is close to the city center and more importantly that it is an area of social status where people with higher income levels live. The most significant reason expressed by those who left the Meram region and moved into Garanti Houses is that the former lacked security and social facilities. Moreover, it was found that the availability of security (73%) and social facilities (71%) is considered by users to be a sign of luxurious housing (Table 6).

Presence of a security unit	%73,33
Availability of social facilities	%71,85
Material quality	%68,89
Size of the garden	%62,22
User-friendliness of the plan	%61,48

Table 6: Quality Housing Attributes for Users

5.3 The level of user satisfaction with housing attributes according to gender

The second point of investigation of the study tackles the level of user satisfaction with housing attributes according to gender. The level of satisfaction is examined under two headings: (1) indoor spaces, (2) outdoor spaces. Table 3 and Table 4 present the t-test results of the comparison of the level of user satisfaction with indoor spaces and outdoor spaces, respectively.

Gender	N	$\overline{x}$	ss	t	p
Female	79	4,24	,68	0,252	0,801
Male	57	4,21	,74		

Table 7: The Level of User Satisfaction with Indoor Housing Attributes According to Gender

Table 7 shows that there are differences between female and male users for what regards the level of satisfaction with the indoor housing attributes. The level of satisfaction of the female users ($\overline{x}$=4.24) is higher than that of the male users ($\overline{x}$=4.21). In addition, the t-test, conducted to observe whether these differences are significant, revealed that there is no significant difference between the level of satisfaction with indoor housing attributes between the female and male users (t=0,252; p>0,05). It could be stated that both groups have a similar level of satisfaction with indoor housing attributes. This could indicate that the gender variable does not affect the level of satisfaction with the indoor housing attributes.

Gender	N	$\bar{x}$	ss	t	p
Female	79	4,10	,66	0,277	0,782
Male	57	4,06	,73		

Table 8: The Level of User Satisfaction with Outdoor Housing Attributes According to Gender.

Table 8 shows that there are differences between female and male users in the level of satisfaction with the outdoor housing attributes. The level of satisfaction of the female users ($\bar{x}$=4.10) is higher than that of the male users ($\bar{x}$=4.06). Besides, the t-test, conducted to understand whether these differences are significant, revealed that there is no significant difference between the level of satisfaction with outdoor housing attributes between the female and male users (t=0,277; p>0,05). It could be stated that both groups have a similar level of satisfaction with outdoor housing attributes. This could indicate that the gender variable does not affect the level of satisfaction with the outdoor housing attributes.

The level of user satisfaction with housing attributes according to age

The third step of the analysis considers the level of user satisfaction with housing attributes according to age. The level of satisfaction is examined under two headings: (1) indoor spaces, (2) outdoor spaces. Table 9 and Table 10 present the t-test results of the comparison of the level of user satisfaction with indoor spaces and outdoor spaces, respectively.

Age	N	$\bar{x}$	ss	t	P
40 and Below	66	3,94	,72	2,619	0,010*
41 and Above	69	4,24	,61		

Table 9: The Level of User Satisfaction with Indoor Housing Attributes According to Age.

Table 9 demonstrates that there are differences between the users that under the age of 40 and over 40 years old in the level of satisfaction with the indoor housing attributes. The level of satisfaction of the first group ($\bar{x}$=3.94) is higher than that of the second group ($\bar{x}$=4.24). According to the results of the t-test, conducted to understand whether these differences are significant, there is a significant difference between the level of satisfaction with indoor housing attributes between the different age groups (t=2,619; p<0,05). It could be stated that the elder users have a higher level of satisfaction with indoor housing attributes. This could be interpreted as the age variable affects the level of satisfaction with the indoor housing attributes.

Age	N	$\bar{x}$	ss	t	p
40 and Below	66	3,97	,72	1,879	0,062
41 and Above	69	4,19	,64		

Table 10: The Level of User Satisfaction with Outdoor Housing Attributes According to Age.

Table 10 demonstrates that there are differences between the users that under the age of 40 and over 40 years old in the level of satisfaction with the outdoor housing attributes. The level of satisfaction of the first group ($\bar{x}$=3.97) is lower than that of the second group ($\bar{x}$=4.19). According to the results of the t-test, conducted to observe whether these differences are significant, there is no significant difference between the level of satisfaction with indoor housing attributes between the different age groups (t=1,879 p>0,05). It could be stated that both groups have a similar level of satisfaction with the outdoor housing attributes. This could be interpreted as the age variable does not affect the level of satisfaction with the outdoor housing attributes.

5.4 The level of user satisfaction with housing attributes according to level of education

The last step of the analysis tackles the level of user satisfaction with housing attributes according to level of education. The level of satisfaction is examined under two headings: (1) indoor spaces, (2) outdoor spaces. Table 11 and Table 12 present the t-test results of the comparison of the level of user satisfaction with indoor spaces and outdoor spaces, respectively.

Level of Education	N	$\overline{\mathbf{x}}$	Ss	t	p
High School or Less	65	4,06	,61	0,640	0,524
University and More	71	4,13	,74		

Table 11: The Level of User Satisfaction with Indoor Housing Attributes According to Level of Education.

Table 11 demonstrates that there are differences between the users with high school education or less and the users with a university degree or more in the level of satisfaction with the indoor housing attributes. The level of satisfaction of the first group ($\overline{\mathbf{x}}$=4.06) is lower than that of the second group ($\overline{\mathbf{x}}$=4.13). According to the results of the t-test, conducted to observe whether these differences are significant, there is no significant difference between the level of satisfaction with indoor housing attributes between the users with different levels of education (t=0,640; p<0,05). It could be inferred that the users with a university degree or more have a slightly higher level of satisfaction with the indoor housing attributes. This could be interpreted as level of education variable does not affect the level of satisfaction with the indoor housing attributes, and both groups have similar levels of satisfaction.

Level of Education	N	$\overline{\mathbf{x}}$	Ss	T	P
High School or Less	65	4,03	,70	0,794	0,429
University and More	71	4,13	,68		

Table 12: The Level of User Satisfaction with Outdoor Housing Attributes According to Level of Education.

Table 12 demonstrates that there are differences between the users with high school education or less and the users with a university degree or more in the level of satisfaction with the outdoor housing attributes. The level of satisfaction of the first group ($\overline{\mathbf{x}}$=4.03) is lower than that of the second group ($\overline{\mathbf{x}}$=4.13). According to the results of the t-test, conducted to observe whether these differences are significant, there is no significant difference between the level of satisfaction with outdoor housing attributes between the users with different levels of education (t=0,794; p>0,05). It could be inferred that both groups have a similar level of satisfaction with the outdoor housing attributes. It could be concluded that level of education variable does not affect the level of satisfaction with the outdoor housing attributes.

6   CONCLUSION

Quality of life is improved by increasing housing satisfaction, and thus a contribution is made to individuals' pleasure out of life, their happiness, mental satisfaction and achievements. It is believed that the factors obtained through user satisfaction questionnaire will be of help to researchers who will study user satisfaction and to those who will design and build new houses.

As a result of this study based on the questionnaires conducted with the inhabitants of Garanti Houses, the level of user satisfaction with the inner and outdoor areas of the complex is determined according to gender, age, and level of education of the inhabitants. When the general level of satisfaction with the housing attributes is observed, it is seen that 80.9% of the users are positive towards the inner areas, whereas 77.2% of them are positive regards to the outdoor areas. Moreover, it is found out that gender does not affect the level of satisfaction with neither the indoor or outdoor spaces. When the level of user satisfaction with the housing attributes is considered in terms of age, it is observed that the age variable does not affect the level of satisfaction with outdoor areas, whereas it affects the level of satisfaction with indoor areas. The level of satisfaction with the indoor housing attributes of the users aged 41 or above is higher. When the level of user satisfaction with housing attributes in relation to the level of education is observed, it is found out that the level of education does not influence the level of satisfaction with the indoor and outdoor areas.

It is revealed that the users hold, in general, positive opinions about the housing complex.

In increasing user satisfaction in Garanti Houses, which was the first large-scale mass housing project in Konya; the factors that were found to be influential in terms of environmental satisfaction are security, social and sports facilities, air quality, noise, traffic and recreation; whereas plan organization, orientation and location of equipments are the factors that were found significant in terms of satisfaction with in-door spaces. Moreover, it was observed that people long for traditional street culture and they are unable to find it in their

relations with neighbours in such mass houses. It is believed that future mass housing projects should consider offering spaces and facilities that are closer to the human scale.

As a result, accommodating in Garanti Houses satisfies people. Therefore, it can be said that mass housing examples designed as building complexes with social facilities is a way of housing provision with which the users are content and satisfied. Future studies can obtain more general findings on the way of improving satisfaction by repeating this study on different locations, different housing types and different scales. Therefore, the findings obtained will help planners, architects and contractors consider the factors that are influential in increasing individuals' quality of life and satisfaction levels. The current factors that guide the preferences of users about satisfaction with houses and environmental quality should provide a basis for design works. Thus, the planning process will be more participatory and pluralistic, which will prevent recurrence of problems in the process of using.

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