HOUSING SATISFACTION VIA POST OCCUPANCY EVALUATION: A CASE STUDY IN SAMSUN*

KULLANIM SONRASI DEĞERLENDİRME İLE KONUT MEMNUNİYETİ: SAMSUN'DA BİR ARAŞTIRMA

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Abstract:

With the rapid increase in the urban population, housing production types have diversified, and mass housing has become the primary production method. The idea of fast and low-cost production has opened the mass housing space to question, and many evaluations have been revealed on the subject. These evaluations are generally made after the households have started to live in the house. Although many studies have been conducted, it is seen that the evaluations made for user satisfaction on mass housing are still insufficient. In many studies, it is stated that mass housing is insufficient in some aspects such as social, economic, aesthetic. This study aims to identify and reveal user satisfaction factors through mass housing projects in the city of Samsun, Turkey. In doing so, a face-to-face questionnaire was conducted with 451 samples. In the study, user satisfaction is discussed under different headings, including user profile evaluations, physical evaluations of the house, environmental evaluations, evaluations regarding social relations, service evaluations, and user evaluations about houses in general. In conclusion, the study results are expected to guide planning decisions that were ignored in mass housing policies.

Keywords: Housing, Mass Housing, User Satisfaction, Post-Use Evaluation.

Öz:

Kent nüfusundaki hızlı artışla konut üretim biçimleri çok çeşitlenmiş, toplu konutlar ana üretim yöntemi haline gelmiştir. Hızlı ve düşük maliyetli üretim düşüncesi, toplu konutta mekân koşullarını sorgulamaya açmış ve konu üzerinden birçok değerlendirme yapılmıştır. Bu değerlendirmeler, hane halklarının konutta yaşamaya başlamasından sonra yapılmaktadır. Birçok araştırma yapılmasına rağmen toplu konutların sayısal büyüklüğüne göre kullanıcı memnuniyetine yönelik yapılan değerlendirmelerin yetersiz olduğu görülmektedir. Yapılan araştırmalarda, toplu konut uygulamalarının planlama ve üretim, sosyal, ekonomik, estetik vb. yönlerden yetersiz kaldığı belirtilmektedir. Bu çalışmada, Samsun il merkezinde konut sorununa çözüm bulmak amacıyla, kullanılmakta olan toplu konutlarla ilgili hane halklarının kullanım sonrası değerlendirmeleri analiz edilmektedir. Araştırmadan elde edilecek analiz ve sonuçlara ulaşılabilmesi ve değerlendirme yapılabilmesi amacıyla 451 adet örneklemle yüz yüze anket gerçekleştirilmiştir. Çalışmada kullanıcı memnuniyeti, kullanıcı profiline yönelik değerlendirmeler, konuta ilişkin fiziksel değerlendirmeler, çevresel değerlendirmeler, sosyal ilişkilere yönelik değerlendirmeler, hizmete yönelik değerlendirmeler ve kullanıcıların genel olarak konutlar ile ilgili değerlendirmeleri olmak üzere farklı başlıklar altında ele alınmaktadır. Kullanıcıların evleri hakkındaki görüşleri, planlama ve tasarımda memnuniyetin artırılması ve tasarımlarda nelere dikkat edilmesi gerektiği konusunda yol gösterici olmuştur. Elde edilen veriler ile Samsun ili özelinde toplu konut üretim sürecinde göz ardı edilen planlama kararları ile ilgili bazı önerilerde bulunulmaktadır.

Anahtar Kelimeler: Konut, Toplu Konut, Kullanıcı Memnuniyeti, Kullanım Sonrası Değerlendirme.

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INTRODUCTION

Housing in Turkey always comes at the beginning of the agenda's problems regarding quantity and quality. The fact that the housing deficit is a severe problem has caused the housing quality to be ignored. Until very recently, the issue of quality in housing has not attracted much attention to even researchers. The country's housing problem's main reasons are rapid population growth and urbanization (Gür, 2000). It is possible to say that Turkey's houses are monotonous, ordinary, do not have a different architecture, imitating each other (Altınsoy, 2015). Besides, mass housing emerged in order to close the needed housing deficit numerically rapidly. Although this type of residence, which is generally multi-story, built quickly and with low cost, is in the majority numerically, it has always been controversial whether it is of sufficient quality in terms of economic and social objectives.

In Turkey, mass housing practices are criticized qualitatively and found insufficient by social, economic, and aesthetic aspects. It is stated that these shortcomings or insufficiencies are caused by fast production and also due to planning. In the literature, as planned in this study, the problem of quality and quantity in housing is approached within the framework of user satisfaction, and the analysis of this satisfaction is evaluated through sample areas (Sadıkoğlu, 2017). Researchers generally make these evaluations after the households have started living in the dwellings (post-use evaluation) rather than the design and construction phases.

Housing satisfaction is a concept expressing the satisfaction of households with current housing conditions (Teck-Hong, 2011) and has been an important research area for researchers (Ibem and Aduwo, 2013). Assessments regarding housing satisfaction show the general satisfaction level and reveal the differences in satisfaction among the criteria (Amole, 2009). In previous studies, the importance of various factors such as user expectations and characteristics, physical characteristics of the house, environmental and cultural features, and location are also mentioned (Ukoha and Beamish, 1997).

When the studies on the housing problem are examined, it is seen that they are mostly done in western countries, and to a lesser extent, in developing and less developed countries (Amole, 2009). Referring to Turkey, some of the studies on post-occupancy evaluation focus on urban open space use, while others focus on buildings' performance. Besides, in terms of housing satisfaction, some studies focus on detached housing sites (Zorlu & Sağsöz, 2010; Zorlu, 2010), and some on social housing areas (Özyurt & Altun, 2015; Gür & Dostoğlu, 2010). Various suggestions are made according to the data obtained from these research results. While some of these suggestions may be similar to each other, there may be differences according to the area studied characteristics. When the studies on the subject in the literature are examined, field studies are carried out through varying sample numbers such as 100 people (Ceyhan, 2002), 874 people (Çakır, 2005), 103 people (Çelik & Bengül, 2008), 364 people (Gür & Dostoğlu, 2010), 77 people (Güremen, 2011), 680 people (Şensoy & Karadağ, 2012), 1328 people (Karakurt Tosun & Fırat, 2012), 94 people (Atik,

Taçoral & Altunkasa, 2014), 281 people (Es & Oral, 2014), 362 people (Arslan, 2015), 250 people (Güremen, 2016), 256 people (Kahraman & Özdemir, 2017), 401 people (Bostancı et al., 2017), 410 people (Silahlı Böge, 2019), 142 people (Esen, 2019), etc. To have a say that, the existence of current studies on the subject shows that the subject still maintains its importance.

Within this study's scope, the housing estates built in Samsun center were selected to analyze the residents' post-use evaluations. The literature was searched, but sufficient research and findings were not found in the area where fieldwork was conducted. This study aims to find a permanent solution to possible problems that are overlooked during the design and construction phase of the houses produced in Samsun city center and minimize the problems encountered in future housing production. In this context, the following issues are tried to be answered.

(1) the effect of demographic characteristics on housing satisfaction

(2) the most suitable and ideal type of housing for users

(3) the most crucial housing quality measures for users

(4) changes in the post-use assessment of households living in different parts of the city

(5) existing housing physical features that will increase the spatial quality

(6) the features that will contribute to increasing the environmental quality

(7) how social relations are perceived by the users

(8) how the users evaluate the existing houses in terms of accessibility

(9) in which direction the users generally evaluate the houses

The hypothesis made within the scope of the study are listed as follows;

- User characteristics are an essential parameter in housing satisfaction. As the user characteristics change, it is expected that the level of satisfaction will also change. Accordingly, there are significant differences in the users' satisfaction levels according to their demographic characteristics in the research area.
- The area where the apartments are located will affect housing satisfaction. For this reason, satisfaction in residential areas located in different parts of the city varies significantly.
- Participants are satisfied with their houses' physical characteristics, but not sufficiently satisfied in environmental and social aspects.
- There is a big difference between users' existing dwellings and their ideal home expectations.
- Establishing new understanding and approaches in housing production and introducing new structuring and models are necessary to increase households' level of housing satisfaction.

Aiming to address the problems of mass housing in line with the users' opinions and evaluate them in terms of spatial and socio-cultural aspects, this study puts forward suggestions for the future, with assumptions guiding field studies, statistical evaluation results, and analysis.

1. METHODOLOGY

As seen in Figure 1, Samsun is a province situated in the middle side of the Black Sea Region of Turkey. It played an essential role in the years of national struggle and is described as "the Black Sea" and "the city of Atatürk." The city has been the most important city of the region in terms of social, economic, historical and geography, and also has become an essential focal point of the region with its culture, education, health, and tourism infrastructure (Yılmaz, 2011; Arslan, 2016). The city has the highest population density in the region (Zeybek, 2006), with a population of 1.348.542 in 2019 (Turkstat, 2019).

Figure 1: Samsun province

The research was revealed in İlkadım and Atakum districts that form the city center of Samsun. It dealt with the evaluations and analyzed the households living in 20 different housing areas in these districts regarding their houses using the post-use evaluation method. The main reason for choosing the housing estates in these areas was no previous feedback from the users in the houses built in this region. Also, it has not been previously investigated what kinds of positive or negative characteristics there were for the quality of mass housing production methods in these areas.

In the study method, a face-to-face questionnaire technique was used to evaluate the housing spaces' quality following the purpose of the project and to measure the participants' satisfaction levels about their houses. The questionnaire leaflet content, which was planned to be applied in the field, has been designed using the literature. In the first stage, before the survey was conducted, the interview questions were tested by conducting a pilot survey, and some additions or deletions were made. The survey was started and completed after testing it with the pilot survey method. It consisted of 6 parts and included 72 questions in total. To measure user perceptions, the participant was enabled to answer the scaled questions with semantic differences. With this, a comparison could be made between the perceptions and preferences of different users. Besides, some semi-open questions were included in the survey, such as the meaning of ideal housing and housing quality. The criteria were formed

in a 5-point Likert type. The criteria prepared in degrees from 1 to 5; 1 = Very Bad, 2 = Bad, 3: No Idea, 4: Good, 5: Very Good.

First of all, there were questions about the demographic characteristics of the participants. To determine the evaluations about the house's physical properties, in the second part, questions were prepared, including physical properties such as the size of the house, the usefulness of the house, heating condition, and strength of the building. The second part consisted of questions directed to the participants under four main headings. The first consisted of 21 sub-questions, and the criteria for the participants to answer were presented in a 5-point Likert type. The second was a semi-open-ended question. Participants were required to specify a maximum of 3 options out of 10 different options. In the others, five different options were presented and asked to specify a maximum of 1 criterion. Option 5 was open-ended in these two questions, and the participant was enabled to give the answer she/he wants.

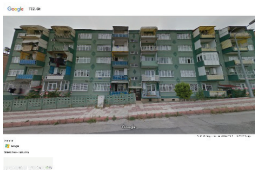
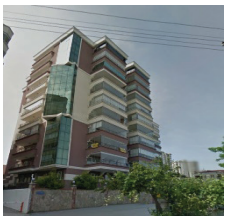
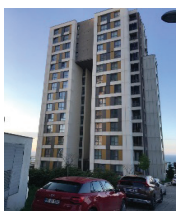
In the third part, the participants were asked to evaluate the environment of the house. Environmental assessments consisted of two questions under two main headings. The first question, consisting of 19 sub-questions, examined features such as the regularity of the environment, the suitability of the environment for children and the elderly, and parking facilities in 5 different scales. The second question focused on what facilities were lacking in the environment. In the 4th chapter, which included social relations, neighborhood relations were examined. In this section, the participants were asked to evaluate the issues of neighborly relations, solidarity, borrowing small items from neighbors, frequency of meeting with relatives, and acquaintance with tradespeople. In the questions, similar to those in other sections, satisfaction level was measured on five different scales. In this direction, the fifth part of the field study consisted of evaluations regarding access to services. In this section, participants were asked a single question under 11 subtitles and asked to evaluate them in a 5-point Likert type. The section consisted of criteria such as the workplace, school, hospital, market, access to shopping areas.

Figure 2: The location of the residential areas in the city selected for the study

In the last part, there were general evaluations of the participants to understand some information about their house lives. The last part consisted of three questions in total,

consisting of the general level of satisfaction with the house, whether it was beneficial to move to the house, and other opinions. The first two questions were asked in the form of a 5-point Likert type, and the other question was asked in an open-ended form. In the field studies to be conducted within the research scope, a total of 451 participants were interviewed, 203 in Atakum district, and 248 in İlkadım district. Figure 2 shows the location of the selected residential areas. The selected 20 different residential areas are shown in Table 1. The participant's selection within the apartment was made by making a random sample in each housing area.

Table 1: Some of the residential areas

 Samsun Royal Life	 Taslakoğlu	 Özkar Körfez	 Ali Dayı
 Ortaklar	 Albayrak	 Canik	 740 Evler Güven
 Birlik	 Anatolia	 Altunevler	 Mira
 Global	 Duruşehir	 Arkabi	 Albayrak
 Huzurevler	 Belde	 Borkonut Plus	 Saral Residence

The fieldwork and discussion of the questionnaires with the participants were carried out by the architect and interior architect students. The resulting data was transferred to the computer environment for analysis, evaluation, and comparison. Basic and cross-table queries have analyzed the results. The assumptions made within the project's scope were tested with the results of statistical evaluation and analysis made on the computer. As a result, future suggestions regarding the subject of the study have been put forward.

2. FINDINGS

The participants answered the questions about their demographic characteristics and satisfaction levels in the questionnaire. These answers were formed by separately examining the six subtitles specified in the questionnaire form. The reliability coefficient (Crα) was calculated as 0.933, a "highly reliable" value.

Table 2: Demographic characteristics of the respondents (n=451)

Characteristic	Categories	%	Characteristic	Categories	%
Age	18-25	12,9	Number of Persons	One person	4,2
	26-35	17,1		Two person	28,2
	36-45	30,8		More than two	67,4
	46-55	21,1		No answer	2
	56-65	15,5	Number of Employees	No Employees	2,4
	No answer	2,6		One person	40,8
Sex	Male	47,2		Two person	55,2
	Female	52,8		More than two	7
Education	Illiterate or do not have a diploma	2,4		No answer	9
	Primary-Secondary	11,3	Monthly Income (1$=7,96 TL)	2500 TL and below	6,9
	High school	37,5		2501-3000 TL	9,3
	University and above	48,6		3001-3500 TL	9,3
	No answer	2		3501-4000 TL	9,3
Marital status	Married	79		4001-4500 TL	6,7
	Single	20,8		4501-5000 TL	9,1
	No answer	2		5001-5500 TL	13,1
Work status	Working	43,7		5501- + TL	35,9
	Retired	15,3		No answer	4
	Housewife	21,3	Home ownership	Yes	71,4
	Student	12,2		No	28,4
	Other	7,3		No answer	2
	No answer	2			

Table 2 shows the demographic features of the families. According to the study results, most of the participants were between the ages of 36-45. According to gender, 47.2% were

male, and 52.8% were female. Nearly half of the participants were university or higher graduates. Most of them were married and working people. There was a scattered situation in the non-working participants, including homemakers, retirees, students, and others. The majority lived in families of more than two people. It has been revealed that more than half of the participants provided a family income with two-person working. Most of the respondents had an income of 5501 TL (1$=7,96 TL) and above. The majority of the participants (71.4%) stated that they were homeowners.

The majority of the participants found the criteria well enough (the size of the house 86,1%, the usefulness of the house 85,8%, the number of rooms 80,2%, the use of the living room and other spaces 85,4%, the ease of maintenance/cleaning of the house 75,3%, heating of the house 79,6%, lighting of the house 89,2%). Most of the participants were satisfied with the criteria; to carry items to the house/car 78,1%, the water and moisture insulation of the house 61,6%, the ease of drying clothes 64,1%, the auditory privacy of the house 45,5%, the visual privacy of the home 66,3%, and being in a central area 70,3%. 37,5% of them indicated that they had no idea about the quality of the buildings' materials. While they found some criteria (74,8% the economic value of the house, 49,9% the strength of the structure, and 40,6% the building's suitability for the disabled) suitable, 16,9% of them stated that they did not have an opinion. Participants replied to the question asked about life quality as mostly living in a safe city (18.3%), living a life without financial difficulties (13.7%), living in a town with good health (12.9%), and social opportunities (cinema, theatre, etc.), living in a city with a lot of theaters (11.1%). Participants rated the ideal residence mostly as a duplex with a garden (39.2%), a single floor with a green (30.4%), and an apartment (26.8%). Ideal housing should be in a place that will gain value in the future according to 18.6% of the participants, in an area with a view according to 32.8%, in a place close to the work/city center according to 38.4%, close to friends/relatives to 8.6%.

73,2% of the participants generally thought that the environment was organized and well-maintained. Participants naturally had positive thoughts on air quality (67,9%), water services (64,5%), street signs and door numbering services (56,9%), lighting services (64,5%), cleaning and garbage services (63,7%), parking facilities (51,8%), and walking around safely on the street (56,9%). 57,2% of the participants stated environmental health conditions as applicable, and a significant proportion (29,3%) said they had no idea. More than half of the participants indicated that they were satisfied with the criteria, the maintenance and quality of the roads and pavements (57,5%), and the vehicle noise in the environment (61,7%). In comparison, the other part (12,4%) stated that they had no idea. When looking at the participants' opinions about the amount of green space as a critical evaluation criterion, it was seen that the distribution consisted of those who answered both good and evil or had no idea. Participants (61,2%) were satisfied with the suitability of the environment for women. Nearly 55,0% of them thought that it was suitable for the elderly and children. Besides, 46,6% of the participants rated the criterion of the suitability of the environment for the disabled as bad. It was striking that a considerable proportion of those

(26,2%) answered "no idea" to the question about security incidents. Participants generally (49,7%) rated the safety of children playing on the street as good. 76.6% of the participants mostly see the facilities in the surrounding area as adequate.

Assessments in social relations focused on the neighborhood and kinship relations of the participants. 63,4% of the participants evaluated the neighborhood relations as good. Most of them found their houses sufficient for helping each other, frequency of meeting with relatives, acquaintance with tradespeople, and friendship. The majority (61,0%) were those who responded enough in their evaluations of borrowing and giving small items from neighbors, but also a significant proportion (24,2%) answered "no idea."

Participants mostly rated the criterion of proximity to the workplace (57,9%) and transportation time as acceptable (62,3%). Slightly more than half of them positively evaluated the requirements for transportation to the school, health center, hospital and market, public transportation service, access to mosques and prayer places, playgrounds and green areas, shops, and needs. 47,2% of the participants responded well about the children's educational opportunities, and 28,8% answered the question with no idea. Participants' views (good and bad) on access to recreational and cultural spaces were similar. In their general evaluations, they mostly (62,5%) stated that they were satisfied with their life at their house. Those who thought they gained economically by moving to their homes and those who believed there was no difference were found in almost the same ratio as 47,7%.

To summarize, most participants found their house good in terms of physical characteristics, social relations, access to services, environmental factors. However, a considerable number of participants found it wrong about the criteria of the suitability of the environment for children, the elderly, and the disabled, the safety of children playing on the street, parking facilities, and vehicle noise. At the same time, the rate of undecided about whether they were satisfied or not was significant. The same thoughts showed themselves as to whether the participants economically benefit from moving to this residence.

3. DISCUSSION

The rapid increase of the world population in the last century and the fact that a large part of the population started to reside in city centers has revealed many problems. Undoubtedly, the housing problem is one of these problems' most important (Altınsoy, 2015). Housing means more than a physical structure that meets the need for housing (Tutkun, 2018). It is the place the needs of the inhabitants are met, the feeling of satisfaction is experienced, and the primary space for the development and maintenance of the residents' health (Bodur, 2012). Housing is one of the essential tools in determining the user's needs and expectations; in other words, ensuring the quality of life (Gültekin, 2015). During the rapid urbanization process, the increasing population, the continuation of the increase in the demand for housing, the squeezing of the cities, as well as the technological developments and the differentiation of living standards have caused the expectations of the housing users

to change over time (Tutkun, 2018). Many variables, including gender, occupation, age, education level, income level, ethnic origin, and political orientation, play a role in the factors leading to housing choice (Gür, 2000).

In this study, the participants had a young and middle-aged population. It was found that the participants had meaningful and different evaluations in almost all criteria in some age groups, as in the study of Kahraman and Özdemir (2017). Also, similar to the study, there were significant differences in neighborhood relations in the study of Gür and Dostoğlu (2010), in the designs of disabled people in Şensoy and Karadağı's study (2012). Accordingly, it can be said that age is an essential factor in some situations in terms of housing satisfaction.

More than half of the participants were women, and it turned out that the female participants were slightly more satisfied with the criteria. As a result, it is seen that female participants were more sensitive to the factors discussed in the study, and they were more satisfied by expressing more opinions. On the contrary, in Özyurt and Altun's (2015) study, male and female participants' satisfaction was very close to each other. However, in the study of Şensoy and Karadağı (2012), Hatipoğlu (2015), Kahraman and Özdemir (2017), and Yılmaz (2019), men were more satisfied with the houses.

Nearly half of the participants were university and higher graduates. It has been revealed that the illiterate participants mostly expressed different opinions compared to the other participants and were more satisfied with their homes. Similar to these results, it was observed in some studies that satisfaction decreased with the increase of education level (Şensoy & Karadağı, 2012; Kahraman & Özdemir, 2017).

Most of the participants were married. Marital status should be considered in some aspects of housing satisfaction. In other words, being single or married reveals some differences in perceptions of the house. Depending on the number of people working in the house, there were meaningful and different participants' evaluations in a significant part of the criteria. These are mostly in participant evaluations where the number of employees was more than two. Families with more than two employees were more satisfied with the criteria. Most of the respondents had an income of 5501 TL (1$=7,96 TL) and above. There were meaningful and different evaluations in all of the criteria, depending on income level. In this respect, it can be stated that income level is one of the essential criteria for housing satisfaction.

The majority of families were homeowners. The participants stated meaningful and different evaluations in some of the criteria, depending on the hosting. However, in some studies (Hatipoğlu, 2015; Kahraman and Özdemir, 2017), the landlords and others (Özyurt and Altun, 2015), the tenants were more satisfied. When the results are evaluated together with the literature, it can be stated that satisfaction can change in terms of ownership. In summary, the change in income level has a significant effect on housing satisfaction and affects satisfaction. However, the satisfaction level of female participants was higher

than that of male participants. Families with a low education level, not living alone in the house, with more than two people working, were more satisfied with their houses than other families. Besides, age, marital status, and occupation factors were not demographic features that determine housing satisfaction.

It is essential to know how much the existing housing conditions are related to the ideal housing in satisfaction evaluations. In this study, participants mostly described the ideal residence as a duplex with a garden and a single floor. It should also be close to the business/ city center, in a place with a view, and that would gain value in the future. One-fourth of the respondents described ideal housing similar to their existing housing. It can be stated that the reason why the majority see the ideal residence different from the existing one is that people are bored and tired of city life. Also, it is thought that the participants' desire to get away from city life could be the reason for this.

Participants expressed life quality as living in a safe city, living a life without financial difficulties, living in a city with good health facilities, and living in a city with many social facilities (cinema, theater, etc.). It can be easily said that these are the criteria desired by nearly everyone. Both central and local governments have essential responsibilities regarding the quality of life criteria specified by the participants. In the studies of Bostancı et al. (2017), Gür and Dostoğlu (2010), and Hatipoğlu (2015), proximity to the city center has an increasing effect on satisfaction. Similarly, in this study, it can be stated that proximity to the city center is a feature that increases satisfaction. Within the research scope, field studies were carried out in 10 different housing sites in İlkadım and ten different in Atakum. Participants had more dissatisfied in Anatolia, 740 Evler, Taslakoğlu, Canik, Saral Residence, Samsun Royal Life, Birlik, and Belde housing areas. Accordingly, the evaluations of households living in different parts of the city change at the housing site scale.

The majority were satisfied with the physical characteristics of their house. Also, it was revealed that the participants did not give primary importance to the structure's durability. They were less satisfied with the auditory privacy, the quality of the materials used in the building, and the building's suitability for the disabled. When considering that such criteria would harm neighborhood relations, various preventive measures (sound insulation, hollow walls, etc.) should be taken during the design and construction phase. Solutions that will ensure privacy in terms of visual perception should be put forward.

When the housing estates in the area where the field study was conducted were evaluated in terms of an architectural plan, it was seen that a systematic approach was adopted, and unnecessary arrangements were made during the design phase. In the research area, there was dissatisfaction with the heating situation in the houses. In this respect, a design concept that will not limit or disrupt the user's comfort level will increase the level of satisfaction compared to summer and winter conditions (read: the periods when the temperature is the highest and the lowest). However, the spatial organization, which may cause energy loss in mass housing, should be designed with a solution proposal that would minimize the

loss, including the outer surface area. The work to be done for each different mass housing settlement must be unique. These studies should include land analysis, climatic conditions, and social studies based on needs and expectations. It can be said that these studies would increase the upfront cost. However, usage and investment costs would also be reduced, and a much more improvement would be achieved in terms of comfort conditions. In the field, it was seen that the balconies in some residential sites were later covered with glass material in order to meet various needs by the user. The irregularities and even ugliness that these subsequent changes may cause on the building's facade should be eliminated at the design stage. Thus, it is necessary to reconsider balcony designs to increase the total useful area in mass housing designs.

More than half of the participants were generally satisfied with the environmental features of their home. In the study of Gür and Dostoğlu (2010), environmental satisfaction is directly related to the proximity of the residence to the city center. Zorlu (2010) stated that participant evaluation regarding environmental factors was positive in their study. Hatipoğlu (2015) and Es and Oral (2014) stated that it was close to half in their studies. In the study of Kahraman and Özdemir (2017), they associated the environment's evaluations with the education level. In this study, satisfaction with children's safety criterion playing on the street was meager compared to other criteria. The reason for that can not only be explained by the characteristics of the environment but also on the level of social relations. If social relations are healthy, it can be stated that the level of satisfaction with the environment will increase. The number of participants who thought the environment was not suitable for the elderly was substantial. It can be concluded that these results could be improved by increasing social relations and some environmental regulations.

According to the results, the participants were mostly satisfied with social characteristics. The number of participants who did not express their opinion regarding acquaintance with the tradesmen and borrowing small items from neighbors was relatively high. A quarter of them found their homes weak in terms of social relations. In some studies (Hatipoğlu, 2015; Kahraman & Özdemir, 2017; Yılmaz, 2019), satisfaction level in social relationships yielded similar results to the study.

The importance of environmental planning in terms of improving social relations is apparent. A residential design that will ensure spaces where users can socially interact, such as courtyards, squares, park arrangements, where they can feel free whenever they want, and spaces where they can realize their hobbies would increase satisfaction. Besides, providing environmental arrangements that will allow various activities such as sitting in open areas and doing sports will increase satisfaction.

In the literature, very different results have been presented in terms of access to services. In some cases (Mohit & Azim, 2012; Es & Oral, 2014; Kahraman & Özdemir, 2017), while the participants were delighted with the criterion, some studies (Yavuzçehre & Torlak, 2006) revealed that they were not satisfied. In this study, most respondents were

satisfied with their houses in terms of access to services, and about a fifth were dissatisfied. Mainly, satisfaction with the criterion of children's opportunities to take private courses was low, and the participants did not express any opinion on the issue. The income level of the participants has an essential share in the evaluation.

More than half of the participants stated that they were generally satisfied with their housing, but interestingly, one-fourth of the participants did not express their opinion on this. In other studies in the literature, the number of participants who did not express an opinion is much less than this. It can be stated that the high number of participants who did not express their opinions was due to the lack of awareness and insufficient opinion on the subject. Almost all of the participants (92.7%) did not want to add anything other than the questionnaire questions. When the evaluations in terms of economic return are examined, the participants who thought they benefited from moving to their house and those who stated no difference were close to each other. One fifth thought that they had not been making a profit. In this respect, it is seen that there is an economic aspect of being in a house, and the level of satisfaction is changeable.

CONCLUSION and POLICY IMPLICATIONS

The increasing population and the fact that the necessity of living together becomes evident day by day reveals how important housing satisfaction research is. With the population movements that emerged with industrialization, solutions to meet this population's housing needs were sought with mass housing. First of all, some researches have come to the fore regarding whether an environment where the users feel safe, happy, and spiritually satisfactory is provided in these housing estates. On the other hand, studies on design can determine difficulty or ease of living in mass housing. Since the planning and design studies carried out at the urban and residential scale create a living environment for people, this environment directly affects the people's happiness and life. Also, decision-makers, researchers, architects, urban planners, and designers can handle the built environment very well and find solutions to problems that may arise regarding satisfaction.

The shaping of the housing satisfaction of the users who have to live in environments created by an inadequate and uncontrolled planning approach can not be explained solely by the house's physical characteristics. Simultaneously, the subject should be deepened with different satisfaction scales such as the environment of the house, demographic characteristics of the user, built environment, quality of central and local services.

One of the most important ways of determining the users' needs, expectations, and opinions regarding current living conditions is post-use evaluation studies. Post-use evaluation studies reveal that the issue is a quantitative problem that can be solved with mathematical formulas and a subject that needs to be answered in terms of social, environmental, accessibility, and so on. Subsequently, it shows that user needs and expectations vary depending on the criteria such as social, environmental, cultural, economic, etc.

In line with this research's purposes, field studies and survey applications were carried out to examine the subject in-depth and reach some outputs. When the literature is reviewed, it is seen that the subject is up-to-date, and approaches similar to this research are displayed. In essence, it can be concluded that the solution to the problem can not be reduced to a simple model and that each area and region has its own problems.

As a result of the research, valuable and original results were obtained for the region. It can be said that the desires and needs of the users change in many aspects, but also they have many common ideas. The results that emerge in these common thoughts shape housing satisfaction and the positive changes regarding these evaluations play a role in increasing satisfaction.

Looking at the research findings, satisfaction levels vary according to user characteristics. The participants' characteristics, such as age, marital status, and occupational differences, did not cause a significant change in the level of satisfaction. However, characteristics such as income, education level, number of residents, and employees led to significant changes in satisfaction levels. Accordingly, these results seem to support the first assumption (there are significant differences in the users' satisfaction levels according to their demographic characteristics). In this reusers' search, the resident in which the field study was conducted was handled in three scales as district, neighborhood, and housing estate. The results show us that at every scale, housing satisfaction differs, and users' opinions change. In this respect, assumption 2 (satisfaction in residential areas located in different parts of the city varies significantly) parallels the study's result. Satisfaction in residential areas located in different parts of the city varies significantly.

Participants are generally satisfied with the physical characteristics of their housing. However, it has been concluded that satisfaction in terms of environmental features will improve with some improvements. Also, the number of satisfied participants is higher in terms of social features, even if not physical and environmental. As a result, the findings do not fully support the 3rd assumption (participants are satisfied with their dwellings' physical properties, but not sufficiently in environmental and social aspects).

The majority did not identify the current housing conditions with their ideal housing opinions. The fact that people live in a house for a long time and that there are many physical, environmental, social, and technological changes in this period shows that the existing housing conditions cannot be idealized. The current residence will even gradually move away from being the ideal residence. Besides, in an environment where immediate consumption drives human life intensely, it seems complicated to evaluate these houses as close to the ideal home without getting bored with the existing housing conditions. In this respect, the desire to change the existing housing conditions and the expectation of differentiation with this desire effectively understand ideal housing. According to these results, the 4th assumption (there is a big difference between users' existing dwellings and their ideal home expectations) is consistent with the research results and supports the results.

According to the results, some features need to be improved in each criterion. For this, the issue should be handled holistically and evaluated on a broad scale. It is inevitable to put forward new decisions and policies up-to-date by approaching the issue not only from the improvement of physical criteria but from different perspectives such as social, environmental, and accessibility. Unless new and up-to-date approaches replace the current ones, the research deficiencies will not be improved, and even the householders would begin to feel dissatisfied with the criteria they are satisfied with. The necessity of addressing the issue with an inclusive approach by different actors overlaps with the 5th assumption (establishing new understanding and approaches in housing production and introducing new structuring and models is necessary to increase the housing satisfaction of households); the 5th assumption supports the research results.

Due to the need for housing in Samsun, mass housing construction continues. However, there is no method or model to direct mass housing production. Housing works must be carried out with a specific method and an inclusive approach. To increase the user's level of satisfaction with the house, the steps to be taken should be approached holistically. In this context, a detailed framework report should be drawn for the mass housing works to be produced in Samsun, in which different actors come together and detail it with sub-headings in a multi-dimensional manner. This report should contain forward-looking projections and information that discusses the problems found in the current housing circumstances. For this, a city-scale planning and road map should be drawn. In this sense, future projections and directions of local governments are very useful.

The local governments have the most important duties and responsibilities in the decisions to be taken regarding the criteria that affect the user's home satisfaction. Addressing and improving the studies on the criteria such as the suitability of the environment for children, the elderly, and the disabled, revealed by the research findings and which many participants find insufficient, will increase the level of satisfaction in housing. A considerable number of participants responded inadequately to criteria such as the suitability of the environment for children, the elderly, and the disabled. That is why local governments' handling and improving the studies for such criteria will increase the level of satisfaction in housing. Thus, studies and steps to be taken towards disadvantaged groups will increase not only their satisfaction but also other users'.

Participants are generally satisfied with the houses; however, many participants do not express an opinion. Participants who do not have enough information about their housing may be adversely affected regarding their physical, social, and environmental features in the long term. Unconsciously choosing a residence will reduce satisfaction in the long run rather than increase. However, it is difficult for people to get away from the current conditions. As a result, the existence of a mass that is not satisfied with their home and environment will emerge as an undeniable reality.

It is vital to exchange views with the users so that some suggestions can be made regarding the residential area's spatial quality. However, considering the scarcity of studies on Samsun's housing satisfaction, it is clear that scientific studies should increase and reach more output in the city. Studies similar to this research should be continued in the upcoming period; the changes that will emerge should be monitored, analyzed, and followed up whether the targets are achieved.

The problems related to mass housing and the analysis and solution suggestions for these problems will continue one after the other. The way to minimize these problems is through cooperation in the struggle against the housing problem. For this reason, it would not be wrong to say that the issue is a difficulty of cooperation and perspective rather than a problem that cannot be overcome.

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