DETERMINANTS OF USER SATISFACTION IN HOUSING AND ENVIRONMENTAL QUALITY: SAMPLE OF ISTANBUL METROPOLITAN AREA

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Abstract

This study aims to assess the factors that improve housing and environmental quality satisfaction. To this aim, the study has mainly focused on the following three objectives: a) the concepts of housing and its environment, and the subject of housing and environmental quality satisfaction have been investigated, b) the conceptual model of housing and environmental quality satisfaction has been developed, which takes up the subject of user satisfaction in housing and environmental quality as a whole, c) the factors increasing level of satisfaction in housing and environmental quality have been specified. Totally, 400 questionnaire inquiries have been made in planned mass housing areas in Istanbul Metropolitan Area. Factor analysis has been applied to the data collected in these inquiries. As a result of the analysis, in order to increase the level of user satisfaction in housing and environmental quality, the following factors have been determined according to their level of importance: Under the subject of convenient accessibility, centrality and accessibility to educational institutions, to open areas, to health institutions, and to public transportation have constituted the first level of factors. The second subject of environmental quality variables includes satisfaction in recreational areas, in centrality, in the social structure – physical features of the settlement – satisfaction in transportation and accessibility, and satisfaction in social facilities. The third subject of environmental security is composed of structural and environmental security of the housing as well as life and property security. Under the subject of neighbor relationships, social homogeneity and distanced neighbor relationships constitute the fourth level of factors. The last subject of appearance of housing environment and economic value consists of the compatibility between the physical appearance of the housing area and user status.

Keywords: *Housing and housing environment, satisfaction in housing and its environment, housing and environmental quality.*

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Introduction

In a residence environment, housing and housing group constitute a fundamental life space to meet the needs of the residents, to satisfy them and to maintain the overall health of individuals/public. Problems about housing and residence environment which are always situated in a physical, psychological and socio-cultural environment, might lead to various user needs. These user needs, together with the surroundings the users inhabit, effect resident satisfaction and attitude, while directing the overall individual/family and public health, happiness and welfare (Lawrence, 1987).

The Istanbul metropolitan area is Turkey's principal metropolitan agglomeration with a population of slightly more than 10 million inhabitants, sheltering 13% of Turkey's population. The city has been expanding rapidly since the 1950s due to rural-urban migration. A number of problems have accompanied this growth, including an infrastructure lag, the expansion of squatter settlements, an accute shortage of housing and a low level of services. The rapid expansion of has affected the quality of life in different districts of Istanbul.

Increase in dwelling and environmental quality satisfaction improves people's quality of life, thus directly affect people's satisfaction in their lives. Therefore, this study has disclosed the necessity that the factors determining dwelling and environmental quality satisfaction should be taken into account during the planning process in order to increase user satisfaction in dwelling and environmental quality.

The aim of this paper is to assess the factors that improve dwelling and environmental quality satisfaction. The organisation of the paper is as follows. The following section considers the previous literature relating to housing and environmental quality satisfaction. Next the methodology for the studt is set out and the characteristics of the sample given. Results of the factor analysis is discussed in section 4. The final section is devoted a summary and conclusion.

Literature Review

Satisfaction evaluations are frequently required in order to determine the propriety of a residence environment for user expectations, needs and goals. Any evaluation we consider on a grand scale is determinant in user satisfaction. In other words, user's satisfaction in the residence environment

reflects people's responses to the environment they live in. The term environment is related not only to the physical components of residence environment consisting of housing, development of the housing area, and neighborhood, but also to social and economic (arrangement and institutions) conditions. If proper techniques are used in data collection and analyses, it is possible to measure physical, social and arrangement factors that determine the level of user satisfaction in the housing area. This information can be used not only for specifying user responses to the environment, but also for developing the current housing area features, its design, and characteristics of new arrangements to be made (Francescato, 1998).

In a behavioral sense, user's satisfaction in housing should be defined as a dependent attitude toward a residence environment. As Rosenberg and Hovland have suggested, when different components of attitude (informational, emotional and behavioral) are considered, some researchers prefer a definition of emotional components for defining user satisfaction in housing, while others prefer perception-based definitions (Amerigo, 2002).

In the definitions to which emotional component is significant, user satisfaction in housing means reflecting the sentiments of satisfaction and happiness to the housing place which also creates these feelings (Gold, 1980; Weidemann and Anderson, 1985). In the definitions to which informational component is significant, user satisfaction in housing is constituted by the correspondence between the current conditions of the users and the standards they expect and demand (Campbell, Converse and Rodgers, 1976; Marans and Rodgers, 1975; Wiesenfeld, 1992). In the informational approach, Bardo and Hughey (1984), Canter and Rees (1982), Morrissy and Handal (1981) have suggested that if the gap between demands and needs decreases, housing area user satisfaction increases.

Studies in this literature have revealed that researchers have used the following variables to investigate satisfaction models by applying various statistical techniques:

1. Variables of housing users' demographic features,
2. Variables of physical residence environment,
3. Variables demonstrating housing users' evaluation of the following elements: residence environment, perception, neighborhood conditions, administration, social relationships between neighbors, safety, accessibility, and the appearance of residence environment.

The studies in this literature measure the joint perception of objective and subjective values that have been obtained until now. In these studies it has been observed that instead of considering the whole model, researchers are concerned with the lower parts of the models they have constituted. However in this study a conceptual model has been formulated, which defines user

satisfaction in housing and environmental quality as a whole. To this purpose, under objective-individual features subjective-individual evaluations have been obtained. Under the rubric of objective-physical environmental features, subjective-physical evaluations about the environment have been determined. Finally, under objective-social environmental features, we have reached subjective-social evaluations about the environment. For all categories of evaluation (subjective-individual, subjective-physical, and subjective-social), individual perception has been our point of reference. Having constituted this conceptual model, all the variables determining housing and environmental quality satisfaction have been taken into account together. As a result of this complex conceptual model, the factors determining housing and environmental quality satisfaction have been specified along with subjective-individual evaluation of objective-physical and social environment in accordance with objective-individual features. (Figure 1).

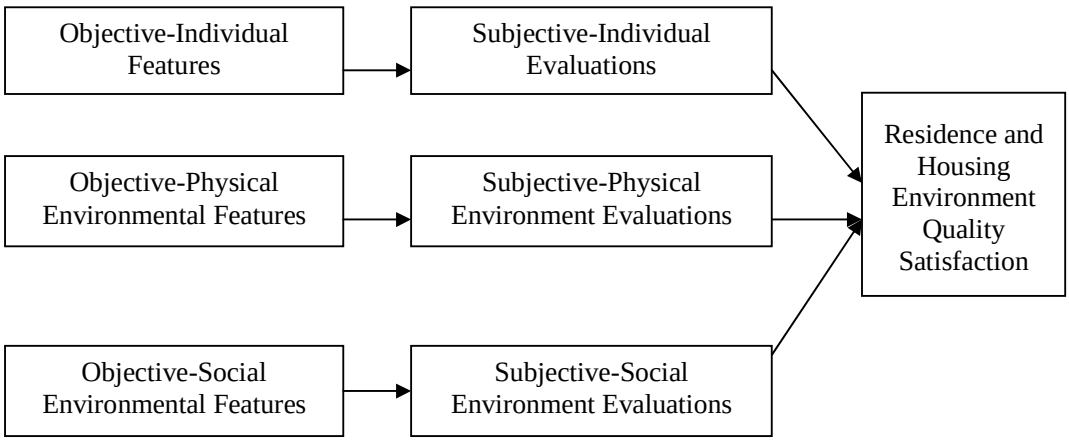

Figure 1. Conceptual model developed for user satisfaction in housing and environmental quality

Objective-individual features consist of demographic factors, socio-economic past life style, and other characteristics that influence user satisfaction in housing such as housing ownership, the ex-housing type, age, gender, education level, income of household members, profession and household size.

Subjective-individual evaluations, which determine environmental quality satisfaction in housing and residence, include subjective features such as behavioral and psychological factors of the housing users.

Evidently relating to housing and environmental quality satisfaction, the objective-physical dimension reveals the physical features of residence environment, and includes the features of neighborhood, density, and place selection that are measured objectively in housing units. Housing

size, number of rooms, the floor of the housing, social facilities, substructural and other physical characteristics constitute the housing type.

Subjective-physical dimension is related to the perception and evaluation of housing user about the housing area's physical environment. This process contains important factors that influence satisfaction, since user perceptions and evaluations of objective environmental features differ.

Objective-social dimension includes the features related to residence duration in the housing area, safety/protection, friendship, neighbor relationships, attachment to the housing place, and privacy.

Subjective-social dimension means perceiving and evaluating the characteristics of housing's social environment. These are the features related to residence duration in the housing area, safety/protection, friendship, neighbor relationships, attachment to the housing place, and privacy.

In literature studies until now, which have measured how objective and subjective values are perceived together, it has been observed that researchers inquire the subsections of the model studied, rather than inquiring the model as a whole. However, in this study a new model has been constructed, which describes user satisfaction in housing and environmental quality as a whole. To do this, under the light of objective-individual features, subjective-individual evaluations; under the light of objective-physical environmental features, subjective-physical environmental evaluations based on individual perception; and under the light of objective-social environmental features, subjective-social environmental evaluations have been obtained. Depending on the conceptual model constructed in this study, all the variables have been considered together, which determine user satisfaction in housing and environmental quality. By means of this complex conceptual model, the factors determining housing and environmental quality satisfaction have been evaluated on the basis of objective-physical evaluations according to objective-individual features, and subjective-individual evaluations according to the social environment.

Research Area

In the conceptual model that has been formulated in this study, describing dwelling and environmental quality satisfaction, the level of dwelling and environmental quality satisfaction appears through users' subjective evaluations of their objective, physical and social environment based on their objective individual characteristics. The dependent variable of our study is dwelling and environmental quality satisfaction; therefore characteristics of the household members,

characteristics related to the dwelling, accessibility, features of the dwelling environment, security, neighbor relationships and the appearance of dwelling environment present the independent variables of the study.

The dependent variable of the survey in this research is **to measure the housing user satisfaction in housing and environmental quality, and to determine the factors increasing the level of satisfaction.** To this aim, questions related to the following independent variables have been posed to the heads of the households: **the characteristics of household members** (the size of the household, gender, age, education, the number of people working, profession, income group, ownership of durable consumer goods, and ownership of vehicles), **features related to the housing** (when the household moved into the housing, ownership of the housing, housing type, size of the housing, the number of inhabitants, the previous neighborhood, the previous housing type), **accessibility** (accessibility to work, to the center where the daily needs are met, shopping center, city center, school, sports facilities, walking areas, refreshment areas, car parking areas, health institutions, education institutions, entertainment areas, recreational areas, public transport stops, and to close relatives and friends), **characteristics of the housing environment** (lighting, maintenance of open areas, maintenance of green areas, traffic density, user density, building density, housing environment facilities), **security** (fire, natural disasters, traffic accidents, robbery, murder), **neighbor relationships** (neighbors of similar social background, acquaintance with people nearby, privacy, charity among neighbors), and **the appearance of the housing environment** (monotony, being interesting, reflecting the social status, economic value).

By means of housing cooperatives, construction of rapid and low-cost housings in mass housing areas might provide a solution for the problem of housing shortage in Istanbul. It is necessary to investigate this subject (related to determining the variables increasing user satisfaction in housing and its environment) in order to meet the needs of the inhabitants living in mass housing areas constructed in grand scale, and to provide maximum level of satisfaction in housing and its environment.

In order to specify the determinants of user satisfaction in housing and environmental quality, samples have been chosen among the mass housing areas (constructed by National Housing Authority, Emlakbank and Municipality of Istanbul Metropolitan Area) with a population of over 5000 inhabitants. These mass housing areas are situated in zones 10-15 km, 15-20 km, 20-25 km, and 25+ km far away from Eminonu centre which are located non-core areas of Istanbul, in the peripheral districts (Figure 2). While selecting these samples, questionnaire quota has been applied

proportional to the population of each housing estate. 401 surveys have been made by personal interviews with the heads of the households (Table 1).

Distance from Eminönü center (km)	Selected Mass Housing Areas	Population of Mass Housing Area	Total area (ha)	Density of Mass housing area (person/ha)	Number of questionnaires	District of Mass housing area
12	Ataşehir	80.000	450	225	64	Kadıköy
15	Ataköy	75.000	377	200	60	Bakırköy
20	Başakşehir	54.000	232,5	230	44	Küçükçekmece
20	Halkalı	180.000	920	195	143	Küçükçekmece
25	Bahçeşehir	60.000	470	130	48	Avcılar
35	Bizimkent	16.000	45,3	350	13	Büyükçekmece
40	Mimaroba	12.000	45	270	10	Büyükçekmece
40	Sinanoba	16.000	75,6	200	13	Büyükçekmece
40	Kiptaş	9.300	14,3	650	6	Pendik

Table 1. Characteristics of selected mass housing areas

In the questionnaires implemented to assess the factors that determine dwelling and environmental quality satisfaction, among the multi-variant analysis techniques, **factor analysis has been applied** in order to analyze the interrelations between the variants, to explain the common elements underlying these variants, and to reduce the number of elements (factors) with minimum level of data loss in related information. Subjects of this analysis, bearing a high degree of correlation, include level of convenience related to the criteria of accessibility to function areas for users of dwelling areas; users' opinions on the environmental features of the inhabited dwelling; user satisfaction degree related to various environmental facilities; security level of the inhabited environment; neighbor relationships in the inhabited area; and appearance of the dwelling environment.

A factor analysis method has been applied to the analysis of data by using the SPSS package program. In the questionnaire form, among factor analysis techniques "Factor Processing Technique" has been applied to the following variables: 13 variables related to accessibility to various function areas in the housing environment, 6 variables indicating opinions about the features of the housing environment, 18 variables related to facilities in the housing environment, 6 variables indicating safety degrees of the housing environment, 7 variables revealing neighbor relationships in the housing environment, and 5 variables indicating opinions about the appearance of the housing environment.

In the first stage a correlation matrix was determined for all the variables and the pairwise method was used for incorrect responses. The Kaiser-Meyer-Olkin (KMO) measurement is an index

value used to analyze the suitability of the sample group to factor analysis. The KMO tests suitability by comparing the rate of significance between the observed correlation coefficient and the partial correlation coefficient. If the KMO value is 0.90 the sample has an “excellent” factor analysis suitability rating. If the value is 0.80 the sample is rated as “highly suitable”. A 0.70 rating determines ”suitable”, while a rating of 0.50 and below signifies that the sample is “unsuitable” for factor analysis (Norusis, 1992). The sample group in this case has a KMO value of approximately 0.81 and, therefore, tests as “highly suitable” for factor analysis.

When a “Principle Component” analysis of the data was executed, it was found that five of the variables were at threshold levels of “Eigen” values while the remaining were in excess of the value of “1”.

Application of Kaiser-Meyer Olkin (KMO) and the Bartlett Test of Sphericity has indicated that the factor analysis results are reliable. The KMO values of samples suggest that the factor analysis results may be accepted with confidence.

Results and Discussion

As a result of **factor analysis, factor groups have been specified, which are influential for an increase in the level of user satisfaction in housing and environmental quality.** The elements influencing these factor groups include accessibility to various function areas in the inhabited housing area, environmental features of the housing, satisfaction in the various facilities in the inhabited environment, environmental security, neighbor relationships, and the appearance of the housing environment.

The criterion of convenient accessibility is also **influential for the level of user satisfaction in housing and environmental quality**, According to the level of importance, the factor groups of this criterion contain **centrality, and accessibility to educational institutions, open areas, health institutions and public transportation** respectively (Table 2). Paralel results were reached by Türkoğlu (1997).

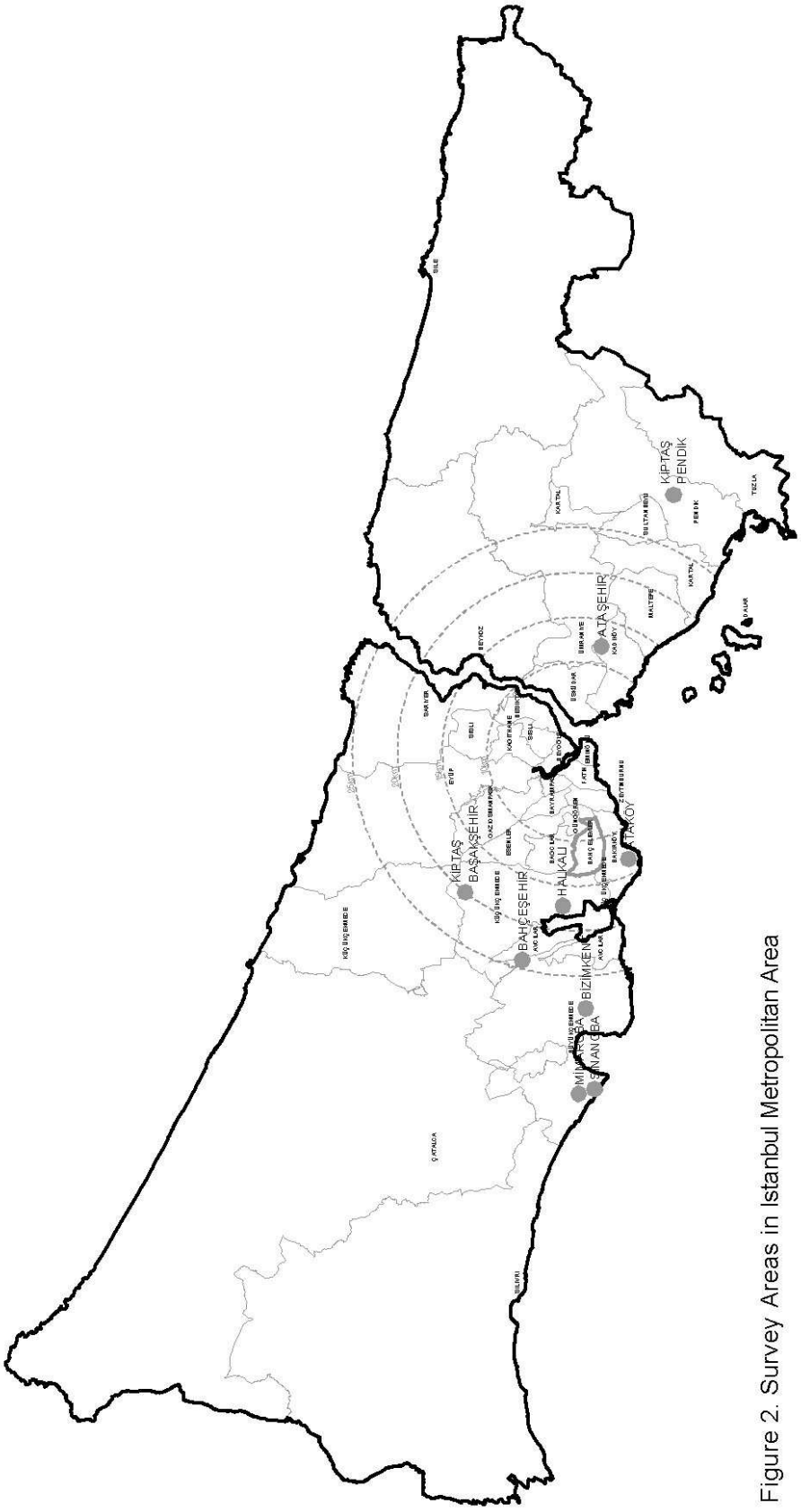

Figure 2. Survey Areas in Istanbul Metropolitan Area

Table 2. Factor dimensions related to accessibility to function areas in the housing area

Factors	Factor Loading	Eigen Value	Explained variance (%)
1. Factor: Centrality		3.739	21.6
V58 Accessibility to shopping center	.775		
V59 Accessibility to city center	.772		
V56 Accessibility to work	.705		
V70 Accessibility to places of entertainment	.654		
V57 Accessibility to the market where daily needs are obtained	.642		
2. Factor: Accessibility to education institutions		1.429	12.2
V67 Accessibility to elementary schools	.742		
V68 Accessibility to high schools	.740		
3. Factor: Accessibility to open areas		1.249	11.8
V64 Accessibility to parking areas	.824		
V62 Accessibility to walking areas	.627		
V61 Accessibility to sports centers	.538		
4. Factor: Accessibility to health institutions		1.139	11.2
V65 Accessibility to local clinics	.861		
V66 Accessibility to hospital	.619		
5. Factor. Accessibility to public transport		.912	8.4
V72 Accessibility to public transport stops	.927		

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
KMO: 0.80

According to the level of importance respectively, **maintenance of the environment and the density of building and traffic** are the two factors revealing the opinions of **housing area users** about the criteria of their **housing's environmental features** (Table 3). A well-cared housing environment creates a positive image, decreasing users' complaints about the housing area and increasing environmental quality. As a result, housing and environmental quality satisfaction is improved. This result bears parallelism with the results of the studies by Becker, (1974), Galster and Hesser (1981).

Table3. Factor groups related to the features of inhabited residence environment

Factors	Factor Loading	Eigen Value	Explained variance (%)
1. Factor: Maintenance of the environment		2.585	34.1
V76 In this environment maintenance of open areas is adequate	.899		
V77 In this environment maintenance of green areas is adequate	.839		
V75 In this environment night lighting is adequate	.694		
2. Factor: Building and traffic density		1.420	32.7
V79 This housing area is small with respect to its population	.859		
V80 The buildings are too close to mine	.809		
V78 In this housing area traffic density (motor vehicles) is high	.725		

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
KMO: 0.67

In the subject of environmental quality variants five factor groups, according to the level of importance respectively, have been specified to include **satisfaction in recreation areas, satisfaction in centrality, satisfaction in the social structure – physical characteristics of the settlement – satisfaction in transportation and accessibility, and satisfaction in social facilities** (Table 4). High level of satisfaction is related to a planned settlement and the facilities provided for the community. In a planed settlement, recreation areas, centrality, socio-physical characteristics of the settlement, transportation and accessibility, social facilities, playgrounds for children, cultural and recreational activities, and security have positive impact on satisfaction in housing and environmental quality. These results yield parallelism with the findings of the researches by Michelson (1977), Savasdisara (1988), and Amerigo (1990).

Table 4. Factor groups related to satisfaction in various facilities in the residence environment

Factors	Factor Loading	Eigen Value	Explained variance (%)
1. Factor: Satisfaction in recreational areas		4.224	14.1
V87 Satisfaction in walking areas	.827		
V88 Satisfaction in relaxation areas	.796		
V86 Satisfaction in sports centers	.723		
V84 Satisfaction in green areas	.493		
V85 Satisfaction in children's playgrounds	.459		
2. Factor: Satisfaction in centrality		2.128	13.0
V99 Satisfaction in accessibility to city center	.832		
V93 Satisfaction in accessibility to entertainment places	.748		
V96 Satisfaction in shopping facilities	.745		
3. Factor: Satisfaction in social structure and physical features of the settlement		1.466	12.9
V98 Satisfaction in social and neighborhood relationships	.817		
V97 Satisfaction in substructure (water, electricity, natural gas, telephone, cable TV)	.815		
V92 Satisfaction in social activities	.735		
V100 Satisfaction in the scenery	.577	1.367	10.5
4. Factor: Satisfaction in transportation and accessibility			
V81 Satisfaction in pedestrian paths	.655		
V82 Satisfaction in traffic roads	.645		
V89 Satisfaction in parking areas	.629		
V94 Satisfaction in public transport	.455		
5. Factor: Satisfaction in social facilities		1.255	7.5
V90 Satisfaction in health institutions	.744		
V91 Satisfaction in education institutions	.668		

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
KMO: 0.76

According to the level of importance respectively, **two factor groups demonstrating the opinions of housing area users about the security of their environment** have been specified to contain **structural and environmental security of the housing, as well as life and property security (Table 5).** In this research the findings related to housing's structural and environmental safety and life and property security show parallelisms with the studies by Jacobs (1961), Newman (1972), Weidemann and Anderson (1982), Perkins (1987), Marans (1979), Francescato et. al. (1979), Lawton (1980), Anderson et. al. (1983), and Cook (1988).

Table 5. Factor groups related to environmental safety

Factors	Factor Loading	Eigen Value	Explained variance (%)
1. Factor: Housing's structural and environmental safety		2.258	31.2
V102 Housing area's protection against fire	.732		
V104 Housing area's safety against traffic accidents	.701		
V103 Housing area's safety against natural disasters (earthquake, flood, and etc.)	.650		
V107 Family's general safety in the housing area	.627		
2. Factor: Life and property safety		1.062	24.2
V106 Housing area's safety against murder	.796		
V105 Housing area's safety against robbery	.610		

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
KMO: 0.74

According to the level of importance respectively, **three factor groups related to the opinions of housing area users about their neighbor relationships** contain **neighbor relationships, social homogeneity and distanced neighbor relationships (Table 6).** To provide satisfaction in housing area, neighbor relationships and the importance of their quality bear parallelisms with the researches by Galster (1981), Lansing et. al. (1970), Deutschman (1972), Marans and Rodgers (1975). The finding that as a result of social homogeneity social unity increases user satisfaction has similarities with the findings of Rent and Rent's (1978) research.

Table 6. Factor groups related to neighbor relationships

Factors	Factor Loading	Eigen Value	Explained variance (%)
1. Factor: Neighbor relationships		2.829	40
V112 Satisfaction in neighbor relationships	.967		
V114 General satisfaction in neighbors in the housing area	.957		
V113 Satisfaction in social relationships	.924		
2. Factor: Social homogeneity		1.295	16.8
V108 Similarity among inhabitants of the housing area in terms of income level, education, and origin	.877		
V109 Acquaintance with many people in the building and environment	.630		
3. Factor: Distanced neighbor relationships		1.017	16.7
V111 Receiving help from neighbors when necessary	.735		
V110 Sufficient privacy from the neighbors nearby	.586		

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
KMO: 0.72

Regarding the appearance of housing environment and economic value, according to the level of importance, **the specified factor groups** include **the harmony between physical appearance of the mass housing area and the status of the users (Table 7).** Researches in this literature have revealed that there is a significant correlation between user satisfaction in housing and residence environment, and perception of the physical quality of that environment. Likewise, Allport and Vernan (1931), Gurin, Veroff and Feld (1960), Dalkey (1972), Francescato et. al. (1974, 1979), and Hourihan (1984) have also stressed the importance of the physical condition of the residence environment while users evaluate their satisfaction in the residence environment. A study by Enosh, Leslau and Shachan (1984), has demonstrated that responses related to the appearance of residence environment (beauty, attraction, cleanliness) have direct and indirect influences on user satisfaction in the environment they live in. Jirovec and Bosse (1985) have also reached the same results.

Taking into consideration all the characteristics that determine housing and environmental quality satisfaction, new perspectives to this subject have been opened by obtaining these factor groups as the determinants of user satisfaction in housing and environmental quality.

Table 7. Factor groups related to residence environment and economic value

Factors	Factor Loading	Eigen Value	Explained variance (%)
1. Factor: Physical appearance of housing estate area		1.635	30.7
V116 This housing estate area has an interesting appearance	.801		
V115 In this housing estate area monotony is prevalent; buildings and constructions are all the same.	-.663		
V117 This housing estate area looks beautiful.	.656		
2.Factor: Propriety to user status		1.065	23.3
V118 This housing estate area reflects my income level and career.	.807		
V120 In general my housing is a good future investment in terms of the area it is situated in	.701		

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
KMO: 0.61

Summary and Conclusion

Throughout globalization process, as it is the case in the whole world, in our country too, people's expectations from the housing and the residence environment have been altering as a result of the changing life conditions. This change has revealed that the factors increasing users' quality of life should be taken into consideration while specifying the factors which determine housing and environmental quality satisfaction, and planning the housing areas.

The overall aim of this study could be summarized in a series of items:

1. to assess the determinants of user satisfaction in housing and environmental quality in order to provide maximum level of user satisfaction,
2. to develop a conceptual model that defines housing and environmental quality satisfaction,
3. to specify the factors of housing and environmental quality satisfaction by testing this model in mass housing areas,
4. and to examine whether these specified factors bear any change based on the demographic and socio-economic differences among the users.

The conceptual model of user satisfaction in housing and environmental quality, which has been formulated in this study, will provide a reference for the researchers who will study on housing and environmental quality satisfaction in the future.

In Istanbul Metropolitan Area a total of 400 questionnaire inquiries have been implemented in the mass housing cooperatives of Ataşehir, Ataköy, Başakşehir, Halkalı, Bahçeşehir, Bizimkent,

Mimaroba, Sinanoba, Kiptaş-Pendik that have been planned and constructed by National Housing Authority, Emlakbank, and Municipality of Istanbul Metropolitan Area.

In the questionnaires implemented to assess the factors that determine housing and environmental quality satisfaction, among the multivariable analysis techniques, factor analysis has been applied. By using this analysis technique, we have aimed to analyze the interrelations between the variables, to explain the common elements underlying these variables, and to reduce the number of elements (factors) with minimum level of data loss in the related information. Level of user convenience related to the criteria of accessibility to function areas, users' opinions on the environmental features of the inhabited housing, user satisfaction degree related to various environmental facilities, security level of the inhabited environment, neighbor relationships in the inhabited area, and the appearance of the housing environment are among the subjects of this analysis, which bear a high degree of correlation

As a result of factor analyses to assess users' satisfaction in housing and environmental quality, **the most significant factors increasing level of satisfaction** have been determined as follows: **centrality** in the subject of accessibility, **maintenance of the environment** in the subject of inhabited environmental features, **satisfaction in the recreation areas** in the subject of environmental quality variants, **structural-environmental security of the housing** in the subject of security, **good neighbor relationships** in the subject of neighbor relationships, and **physical appearance** in the subject of housing environment and physical appearances. And consequently all these have disclosed that centrality, maintenance of the environment, satisfaction in the recreation areas, structural-environmental security of the housing, neighbor relationships, and physical appearance are the most influential factors to increase user satisfaction in housing and environmental quality in mass housing areas in Istanbul Metropolitan Area.

This study has indicated that it is necessary to consider the factors determining housing and environmental quality satisfaction during the planning process, so that user satisfaction in housing and environmental quality will increase. By this way, it will be possible to plan a more livable and more sustainable city life that will provide a higher level of user satisfaction.

Increase in housing and environmental quality satisfaction improves people's quality of life, thus directly affects people's satisfaction in their lives. Housing areas that are satisfactory and pleasant for people increase spiritual fulfillment of users, and help them to be successful in life. For this reason, the results of this study should constitute a reference of guidance in country-wise

housing policies, and the factors that increase user satisfaction should be taken into consideration in future planning.

Consequently, housing area planners, designers and constructors will be able to contribute to the ways of solution to increase people's quality of life and level of satisfaction by carefully regarding the factors that determine user satisfaction in housing and environmental quality under the light of their demographic and socio-economic structures.

People and institutions who are involved in the planning process should wield the contemporary factors revealing user preferences about housing and environmental quality satisfaction as part of planning input so as to increase the level of user satisfaction. As a result, public requirements and expectations will have been taken into consideration, and members of the public will be able to participate in the planning process.

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