Comparing the residential developments in gated and non-gated neighborhoods in Istanbul

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Abstract
Since the 1970's, construction of the Bosphorus Bridge and the new highways, the rise in the use of private cars have increased the accessibility in Istanbul. Besides, Istanbul has gone through a structural transformation, becoming a multi-centred city. Such factors have naturally accelerated the decentralization of housing areas in Istanbul.

Since the 1990's, the preferences of the people from the elite social classes in Istanbul have shifted from the heterogeneous housing areas to homogenous places isolated from the dense central areas of Istanbul. As a result, mass housing areas have spread rapidly in the peripheries of the city. In this new transformation, the elite people living in such mass housing areas have found a chance to obtain their cultural and social expectations.

This phenomenon has gained significance due to the demand for the northern and north-eastern districts of the city since the 1999 earthquake in the Marmora Region. Since we know the patterns of housing area development and density change, the potential future developments can be anticipated.

The researches carried out until now have demonstrated that quality of the residence and residential environment is influential in the overall resident satisfaction. In terms of environmental quality variables such as basic urban services and amenities, it has been determined that the housing areas within the scope the project have high standards. As a result of this fact, people from high income group tend to choose housing areas in the peripheries of the city.

This purpose of this article is to assess the factors that improve housing and environmental quality satisfaction in gated single-family and non-gated mass housing developments in Istanbul

Keywords: *Gated residential developments, satisfaction of housing and environmental quality, Istanbul*

1.   Introduction
Gated communities which have the potential to transform the urban environment in the 21st century. Gated communities (GCs) represent an

urban phenomenon that is spreading all over the world. The popularity of living in gated communities have been rising last decades. In a global context, gated communities are sprawling not only in the U.S., but also in Latin America, Europe and Asia (Blakely and Snyder, 1997). The subject has been given most attention in the United States, where the highest valuations estimate that nowadays more than 32 million Americans (12 percent) live in GCs. There is little available information about the growth of GCs in the UK (Atkinson et al. 2003).

The physical form of gating exists in the history for a long time and is widely seen in East Asia and Latin America. The gate and walls can at least date back to the walled city when the city was used for military defense (Wu, 2003). During the Middle Ages, many towns built extensive walls to protect their citizens. With changing military technology and expanding political alliances, city walls gradually became unnecessary.

GCs can be defined as residential areas for upper-class families who look for security, comfort, a better life quality and social homogeneity. They consist of neighborhoods closed by walls, barriers, fences and gates (Roitman, 2003). The concept includes residential areas with restricted access and defines a self-sufficient environment with swimming pools, private bars, children's play areas and a full accompaniment of care-taking staff and security forces (Landman, 2000). The GCs life-style is mainly inspired by the historical golden-ghettos found in industrial-era cities, in New York, London and Paris. Those enclaves are now mainly suburban neighborhoods emphasizing on a "community life-style" and security features (Le Goix, 2003).

Within private neighborhoods there is a difference between the type of access restrictions: defensible and defended (Sanchez and Lang, 2002). Defensible space has spatial barriers (simple walled, gated, fenced) surrounding the community. Defended space (guarded entrances) is a defensible space that includes an active neighborhood access control system.

GCs have greatly developed since the 1970s, thus becoming one of the symbols of the metropolitan fragmentation and one of the increases of social segregation (Blakely and Snyder, 1997). There are different causes for arrival of gated communities, which can be divided into two groups: structural and subjective ones. Within the first group the most important ones are the raise of insecurity and fear of crime, the failure of the state to provide basic services to citizens, increasing social inequalities, an advancing process of social polarization and international trend encouraged by developers (Roitman, 2003). Urban violence and fear of crime are mentioned as the main reasons for moving to a gated community within the body of literature on the topic (Blakely and Snyder, 1997; Caldeira et al., 2000). But some researchers suggest that gated communities are not safe places (Blakely and Snyder, 1997).

The literature of GCs is divers. Insights have been drawn from a wide range of studies on the conditions upon which gated communities have been created. These have been explained through different perspectives: the critique of fortress city (Davis, 1990), transformation of civil to consumer spaces (Christopherson, 1994), the end of public space (Mitchell, 1995), social polarization and segregation (Caldeira, 1996), the fear of the crime

and surveillance (Low, 2001), private governance and homeowners' association (McKenzie, 1994), and the club realm of service delivery (Webster, 2001). They are criticized as exclusive, reactionary, and socially isolating (Low, 2001; Marcuse, 1997; Wilson-Doenges, 2000). The academic planning literature would seem to suggest that gating contravenes professional planning principles of openness, access, diversity, and equity.

Some early academic works on gated communities also offered harsh critiques, depicting them as symbols of America's lost sense of community life (McKenzie, 1994).

2.   Residential Satisfaction in Housing Areas

Real estate development corporations are concerned about housing quality and customer satisfaction. Customer satisfaction studies can help companies determine the key factors which influence user satisfaction. These studies' results can be used enhance the quality of housing and its environment, promote the housing market, improve the quality of life and promote suggestions to policy makers (Song, Yan; 2006)

The research of residential satisfaction and environmental quality has become one of the important objectives of city policy and urban planning. Since the 1970s researchers have increasingly examined the relationship between resident satisfaction and physical and social aspects of the residential environments. Some of these studies are theoretical, while others are practical. In the theoretical approach, satisfaction studies have been concerned with developing the RS model, which intends to find out the process of RS. User satisfaction has been discussed in various empirical studies which examine personal characteristics (cognitive, affective or behavioural) or physical and social features of residential environment (Amerigo, 2002).

Francescato et. al. (1974) have considered that RS in dwelling is composed of objective-individual and objective-physical features, as well as user expectations from the housing environment. Galster and Hesser (1981) have provided a model of housing user satisfaction by using path analysis. Their model has been defined by summarizing the relationship between objective-independent and subjective-interventional variables. When the conceptual model of Marans and Spreckelmeyer (1981) is examined, the objective features of the physical environment are used to understand the correlation between housing user satisfaction and behaviour. Their model not only shows that housing satisfaction is influenced by perceptions and evaluations of objective environmental features, but also user behaviour is affected by environmental satisfaction.

In the definitions underlining effective component, 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 underlining cognitive component, however, user satisfaction in housing is constituted by the correspondence between the current conditions of the users and the standards they expect and demand (Campbell et al, 1976; Marans and Rodgers, 1975; Wiesenfeld, 1992). In the cognitive 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. Amerigo and Aragones (1997) presented a theoretical and methodological approach to the study of residential satisfaction, and gave a general view of the relationships between people and their residential environment. Amerigo's model (2002) is based on the subjective user evaluations about the objective housing area environment that is defined in terms of physical and social features. Kamp et al. (2003) constructed a multidisciplinary conceptual framework of environment quality and quality of life for the advancing of urban development, environmental quality and human well-being. Marans (2003) described subjective and objective indicators for measuring the quality of community life.

There is a strong relationship between residential preferences and satisfaction (Ge and Hokao, 2006). Garling and Friman (2002) noted that residential satisfaction is a natural criterion to judge the success of residential selection. In their research, activities leading to the achievement of life values were identified as objectives. Carvalho et al (1990) first measured residential satisfaction in gated communities in Brazil. Their study was based on a conceptual model developed by Weidemann and Anderson, (1985) which combines personal characteristics with objective environmental attributes in predicting and measuring residential satisfaction- in gate-guarded neighbourhoods in Brazil.

In this study in order to comparative analyse the determinants of households' residential satisfaction in gated and non-gated communities (access not controlled areas) in Istanbul.

The research hypothesis is that gated and non-gated communities have distinct set of determinants of residents' satisfaction.

3. **Research Area and Methodology**
The data was collected by a questionnaire survey selected through a systematic random sampling in Istanbul. In the scope of this study 802 questionnaires were responded in face to face interviews in single-family gated communities and non-gated multi-family residential areas in Istanbul.

In the scope of this study 401 questionnaires have been made by personal interviews with the heads of the single-family gated communities' households. In order to specify the determinants of residents' satisfaction in single-family gated estates, samples have been chosen in 11 districts of Istanbul (Avcılar, Bakırköy, Beşiktaş, Beykoz, B. Çekmece, Eyüp, Kartal, Pendik, Sarıyer, Tuzla, Üsküdar), which are single-family gated housing areas around the peripheries of Istanbul (Berköz, 2008). These housing estates have been situated in the periphery of Istanbul since the 1999 earthquake in the Marmora Region. This questionnaire survey was carried out in the year 2006.

In order to specify the determinants of user satisfaction in housing and environmental quality, samples have been chosen among the multi-family 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 Eminönü centre, which are located in non-core areas of Istanbul. This questionnaire survey was

carried out in the year 2004 (Kellekci and Berkoz, 2006). While selecting these samples, questionnaire quota has been applied proportional to the population of each mass housing (Table 1a).

Within the scope of this study, 401 surveys have been conducted in 9 non-gated multi-family GCs, and 401 in 99 single-family GCs. Approximately 502.300 people inhabit the 9 multi-family GCs, while 34.208 live in the 99 single-family GCs (Berköz, 2008) (Kellekci and Berköz, 2006).

When we consider the population, area, and population density in mass housing areas, within the scope of this study we see commonly that the single-family GCs consist of a combination of a few neighborhood units. 88% of the 99 single-family GCs surveyed in this study inhabit housing areas below 20 hectares (the smallest is 0.38 Ha, and the largest 228). In terms of population, there are 42 residential areas whose total population does not exceed 100 people. When population density is considered, it is seen that these settlements generally consist of detached buildings of 2 and 3 stories, which in return leads to low population density in these areas. The average population density is 58 persons/Ha with 352 persons/Ha the highest and 13 person /Ha the lowest.

On the other hand, multi-family non-gated communities are usually seen in wide areas with sheltering dense populations in high-storey buildings. The minimum size of residential area is 45 Ha, while the maximum size is 900 Ha. When population size is taken into account, non-gated residential areas are observed to provide settlement opportunities for a population of over 10.000. This leads to the dense use of areas. The average population density is 272 persons/Ha (minimum 195 person/Ha and maximum 600 persons/Ha) (Table 1a and 1b).

Table 1a. Characteristics of selected Gated Single-Family Gated Communities

| Distance from Eminönü center (km)	Population of Mass Housing Area	Total area (ha)	Density of housing area (person/ha)	Number of questionnaires	District of Mass housing area
35	59	0,60	99	4	Avcılar
15	181	1,85	89	5	Bakırköy
3	122	1,90	63	2	Beşiktaş
33	10.293	346,10	38	102	Beykoz
45	2.813	57,37	65	141	Büyükçekmece
22	4.323	125	34	15	Eyüp
54	211	8	26	4	Kartal
62	1.201	16,55	64	12	Pendik
30	6.594	126,80	52	101	Sarıyer
9	1.325	14,1	94	15	Üsküdar

Table 1b. *Characteristics of selected Non-Gated Multi-Family Communities*

Distance from Eminönü center (km)	Population of Mass Housing Area	Total area (ha)	Density of housing area (person/ha)	Number of questionnaires	District of Mass housing area
12	80.000	450	225	64	Kadıköy
15	75.000	377	200	60	Bakırköy
20	234.000	1153	213	187	Küçükçekmece
25	60.000	470	130	48	Avcılar
35	44.000	165,9	273	36	Büyükçekmece
40	9.300	14,3	650	6	Pendik

In the first stage of the study the arithmetic mean and the standard deviation values have been analysed based on the answers related to accessibility to function areas and satisfaction in the various facilities in the housing environment, which affect the overall satisfaction in housing and housing environment. In the questionnaire form, the degree of user agreement is indicated on a continuous scale from 1 to 5, which has enabled us to calculate the arithmetic mean and the standard deviation value for each answer. Arithmetic mean value reflects the degree of agreement to a statement/subject matter. This enables the subject matters to be ranged meaningfully. Thus, it is possible to determine which question in the questionnaire form the participants have agreed with a higher level.

In the second stage of the study factor analysis has been used in order to specify the determinants of user satisfaction in housing and environmental quality. As a result of factor analysis, factor groups that increase the level of user satisfaction in housing and environmental quality have been specified. The elements influencing these factor groups include accessibility to various function areas in the residential 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 locations of the study areas are shown in Figure 1.
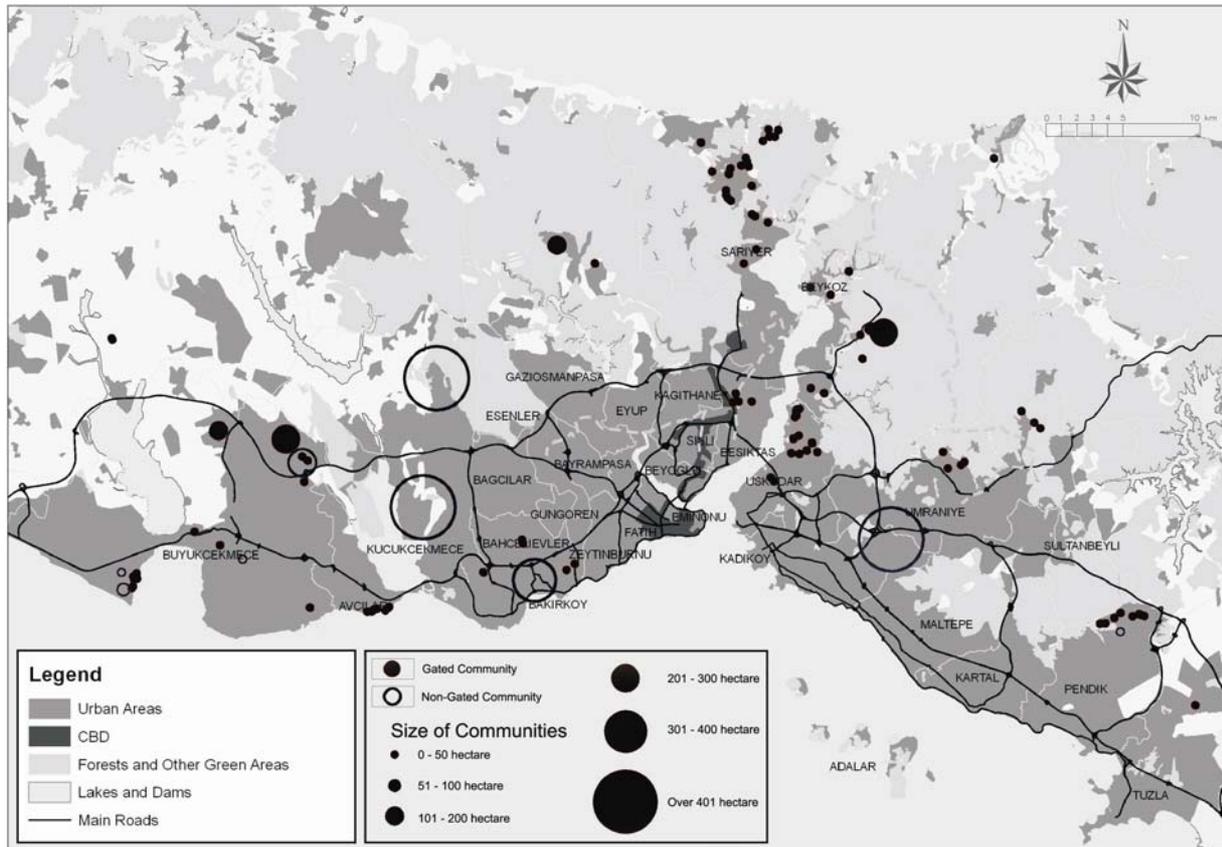
Figure 1. Dispersion of gated and non-gated communities by Community Size

4. Empirical Findings
4.1. Household's Characteristics

The average size of household members is close in the two samples with 3.26 in multi-family mass housing areas and 3.3 in single-family GCs.

Comparing the two GCs in terms of education level, it is seen that in single-family GCs 58% of the household leaders and 45% of their partners are university graduates; besides, 14.5% of the houselhold leaders and 6.3% of their partners have completed a graduate program. On the other hand, 32% of the household leaders in multi-family non-gated communities and 25% of their partners are university graduates.

When users' income level is evaluated, it is seen that 14% of single-family GCs' users belong to high-income group and 44.5% to middle-high income group, while 16% of multi-family non-gated communities' users belong to high-income group and 36.9% to middle-high income group. These figures are also verified by high sale rates and high housing ownership rates in the studied areas. (House ownership rate in single family GCs is 82.8% and in non-gated communities 50.4%).

When working rates and work areas of gated community users, who generally hold nuclear family structure, are evaluated, both samples are

observed to possess close values. In single-family GCs, 88.5% of the household leaders, 37.5% of their wives, and 22% of the firstborns work. In multi-family non-gated communities, 88.4% of the household leaders, 43% of their wives, and 21.9% of the firstborns work. When the work fields are considered, 85.6% of the household leaders and 47.9% of their wives in single-family GCs, and 85.6% of the household leaders and 47.9% of their wives in non gated multi-family communities have been determined to work in service sector jobs.

According to the survey results, in single-family housings, 31.9% of the inhabitants own 1 car, 47.9% own 2 cars, and 16.5% own more than 2 (which mean that the average number of cars per household is 1.77 at minimum). In non- gated multi-family communities, however, the rate of car ownership is slightly lower with 50.2% owning 1 car, 22.4% 2 cars, and 4.2% more than 2 (which mean that the average number of cars per household is 1.07 at minimum). It is seen that the majority of the population in the sample areas is working. In the survey studies, in response to the question inquiring about "accessibility to work", 46.9% of the inhabitants in single-family housings have said "easy", while 25.9% have assessed the accessibility to be "difficult". On the other hand, 83.8% of multi-family non- gated comunities' users have responded "easy", while 16.4% have given the answer "difficult". As a result, we can remark that house-work commute for single-family GCs' inhabitants are often long and proceed towards the city center, for these housings are generally constructed in the peripheral districts of Istanbul. In addition to the demand of easy travel, another significant issue is car ownership.

In summary, respondents' profiles of two samples areas (gated and non-gated neighborhoods) are generally similar. Most of their residents are upper- and middle-class families (See Tables 2 and 3).

Table 2. *Respondent's Profile (Gated Single-Family)*

Family Income	Frequency	%
Low income	2	0,5
Lower middle	5	1,2
Middle income	160	39,9
Upper middle	178	44,4
High income	56	14,0

Household Size	Frequency	%
1-2	64	15,9
3-4	301	75,0
5-6	34	8,5
7 and +	2	0,5

Age of Parents	Man Frq.	%	Woman	%
0-29	28	7,0	83	22,4
30-59	328	81,8	276	74,6
60 +	45	11,2	11	3,0

Family Education	Man	%	Woman	%
Primary school	16	4.3	30	8.1
Secondary school	6	1.6	29	7.8
High school	132	35.9	150	40.6

Vocational school	30	8.1	30	8.1
University	185	50.1	131	35.4

Occupation	Man		%	Woman		%
Manager	11		2,9	4		1,0
Civil servant	11		2,9	28		7,2
Tradesman						
Artist	4		1,1	8		2,1
Artisan	-		-	4		1,0
Housewife	-		-	155		40,1
Retired	33		8,7	36		9,3
Tradesman	26		6,9	2		0,5
Academics	14		3,7	5		1,3
Teacher	-		-	17		4,4
Self-employed	124		32,7	37		9,6

House Ownership	Frequency	%
Renter	46	11,5
Owner	332	82,8
Family House	23	5,7

Table 3. *Respondent's Profile (Non-Gated Multi-Family)*

Family Income	Frequency	%
Low income	16	4
Middle income	173	43.1
High income	212	52.9

Household Size	Frequency	%
1-2	109	27.2
3-4	238	59.4
5-6	54	13.4

Age of Parents	Man	%	Woman	%
0-29	73	19.7	83	22.4
30-59	265	71.6	276	74.6
60 +	32	8.6	11	3

Family Education	Man	%	Woman	%
Primary school	16	4.3	30	8.1
Secondary school	6	1.6	29	7.8
High school	132	35.9	150	40.6
Vocational school	30	8.1	30	8.1
University	185	50.1	131	35.4

Occupation	Father	%	Mother	%
Worker	17	4.6	9	2.4
Civil servant	42	11.3	55	14.9
Tradesman	12	3.2	3	0.8
Artisan	19	5.1	10	2.7
Housewife	0	0.0	161	43.6
Retired	15	4	19	5.1
Tradesman	56	15	9	2.4

| Lecturer | 23 | 6.2 | 27 | 7.3 |
| Self-employed | 167 | 44.7 | 46 | 12.4 |

House Ownership	Frequency	%
Renter	131	32.6
Owner	202	50.4
Family House	66	16.5
Lodging	2	0.5

4.2. Perception of Housing and Environmental Quality

In this section the arithmetic mean and the standard deviation values have been analysed based on the answers related to satisfaction in the various facilities of the inhabited environmental characteristics, which affect the overall satisfaction in housing environment. The following two are the highest arithmetic means of the variables that affect single-family GCs users' satisfaction in the housing area they live in: "the overall family safety in the housing area" (x=4,05), and "in terms of the area it is situated in my house is a good investment" (x=4,03). Following these, the variables related to "accessibility to parking areas" (x=4,02) and "security of the housing area against natural disasters" (x=4,00) have been determined. The variable that is least effective in housing and environmental quality satisfaction have been determined to be the question "the size of this housing area is small with respected to the number of people living" (x=2,26). When we analyse the issue with respect to standard deviation, the criteria which have yielded the highest arithmetic mean – namely, "the overall family safety in the housing area" (x=4,05, s=,813), "in terms of the area it is situated in, my house is a good investment" (x=4,03, s=,860), and "accessibility to parking areas" (x=4,02, s=1,053) -have been found to correspond to low standard deviation values, and this indicates the high level of reliability.

When the outcomes are assessed with respect to arithmetic mean and standard deviation values, it has been determined that the aspect of "security" bears great importance to GCs user's satisfaction. Urban violence and fear of crime are mentioned in the literature as the main reasons for moving to a gated community (Blakely and Snyder, 1997; Cabrales Barajas&Canosa Zamora, 2002; Caldeira, 2000; Carvalho et.al, 1997; Landman, 2002; Low, 2000; Roitman, 2003). Therefore, this outcome bears parallelism with the findings of most of the previous studies, according to which the factor of "security" has been found to be the most significant reason for people's choice of living in gated areas.

The second most important variable related to the "good investment quality of the housing" is understood under the light of the economic changes in Turkey: after the 1980s, the high inflation rates resulted in a speculative increase in purchase values in the housing sector, which made housings a good investment device.

Together with the increasing level of car use day by day, the insufficiency of parking areas constitutes one of the major problems in almost all housing areas of any size. In single-family gated communities the requirement of parking areas gains more significance because of the high level of private car ownership. In such settlements, users generally demand private parking areas allocated for their personal use. Covered garages or car pockets designed right in front of the housings can be given as examples to address to this demand. Most of the single-family housings that are studied in a

research are inadequate in terms of parking areas, and that users park their car on the sides of roads that provide inner traffic circulation in the related housing areas (Berköz & Tepe, 2008). In this study; in spite of inadequate parking areas, the third most important variable "accessibility to parking areas" that affect single-family GCs users' satisfaction in the housing area they live in.

The highest important variables that affect housing area users' satisfaction are different in gated and non-gated housing areas. Among the criteria relating to user satisfaction in the inhabited environment in non-gated residential areas, "satisfaction open areas" (x=4,18), "satisfaction in green areas" (x=4,15), "accessibility to the market where daily needs are obtained" (x=4,06) and "satisfaction in children's playgrounds" (4,03) which yield the highest arithmetic means, have been determined to be the statements of highest gratification (Table 5).

Table 4. *Results of the Factor Analysis (Gated Single Family Houses)*

Factors	Factor Loading	Eigen Value	Explained variance (%)
1. Factor: Satisfaction in open and green areas		5,939	11,6
Satisfaction in open areas	,861		
Satisfaction in green areas	,853		
Satisfaction in traffic roads	,781		
Satisfaction in pedestrian paths	,779		
Satisfaction in walking areas	,748		
Satisfaction in relaxation areas	,728		
Satisfaction in children's playgrounds	,654		
Satisfaction in the scenery	,595		
Satisfaction in the sports centres	,517		
Satisfaction in parking facilities	,502		
2. Factor: Security of residential environment		4,112	8,0
Security against robbery	,808		
Housing area's protection against fire	,783		
Security against natural disasters	,782		
Transportation safety	,780		
Security against criminals	,762		
Family's general safety in the housing area	,647		
3. Factor: Satisfaction in Social and Neighbourhood Relationships		3,145	6,1
Satisfaction in neighbourhood relationships	,921		
Satisfaction in social relationships	835		
Receiving help from neighbours when necessary	,812		
Acquaintance with many people in the building and environment.	,792		
4. Factor: Satisfaction in accessibility central facilities		3,112	6,1
Accessibility to various functional areas	,710		
Accessibility to city centre	,698		
Accessibility to relatives and friends	,665		
Accessibility to places of entertainment	,645		
Accessibility to shopping centre	,644		

Factors	Factor Loading	Eigen Value	Explained variance (%)
5. Factor: Propriety to user status		2,776	5,4
This housing estate reflects my income level and career	,787		
Satisfaction in appearance of housing estate	,759		
This housing estate area looks beautiful	,750		
In general my housing is a good future investment in terms of the area it is situated in	,624		
This housing estate area has an interesting appearance	,563		
6. Factor: Accessibility to open areas		2,674	5,2
Accessibility to walking areas	,767		
Accessibility to relaxing areas	,759		
Accessibility to relaxing areas	,708		
Accessibility to parking areas	,594		
7. Factor: Satisfaction in Social and Public Facilities		2,591	5,0
Satisfaction in social activities	,782		
Satisfaction in places of entertainment	,723		
Satisfaction in health facilities	,652		
Satisfaction in educational institutions	,601		
8. Factor: Maintenance of the residential environment		2,344	4,5
Maintenance of open areas is adequate	,851		
Maintenance of green areas is adequate	,831		
In this environment night lighting is adequate	,690		
9. Factor: Accessibility to Educational Institutions		,2,322	4,5
Accessibility to elementary schools	,848		
Accessibility to high schools	,780		
Accessibility to Universities	,687		
10. Factor: Building and Traffic Density		2,160	4,2
This housing area is small with respect to its population	,795		
The buildings are too close to mine	,782		
In this housing area traffic density is high	,756		
11. Factor: Accessibility to health facilities		1,698	3,3
Accessibility to local clinics	,781		
Accessibility to hospital	,696		
12. Factor: Satisfaction in Public Transport		1,520	2,9
Satisfaction in public transport facilities	,711		
Accessibility to bus stops	,711		

Extraction method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization KMO: 0,85

Table 5. *Results of the Factor Analysis (Non-Gated Multi Family Houses)*

Factors	Factor Loading	Eigen Value	Explained variance (%)
1. Factor: Satisfaction in accessibility central facilities		3,494	9,7
Satisfaction in places of entertainment	,767		
Satisfaction in accessibility to city centre	,762		
Accessibility to places of entertainment	,755		
Accessibility to shopping centre	,684		
Accessibility to various functional areas	,671		
Accessibility to city centre	,594		
2. Factor: Satisfaction in Educational Institutions		2,904	8,0
Accessibility to high schools	,931		
Accessibility to elementary schools	,924		
Satisfaction in educational institutions	,736		
Accessibility to Universities	,682		
3. Factor: Satisfaction in Neighbourhood Relationships		2,800	7,7
Satisfaction in neighbourhood relationships	,966		
Satisfaction in neighbours	,952		
Satisfaction in social relationships	,921		
4. Factor: Satisfaction in Open Areas		2,446	6,7
Satisfaction in walking areas	,834		
Satisfaction in relaxation areas	,808		
Satisfaction in the sports centres	,789		

5. Factor: Satisfaction in health facilities		2,107	5,8
Satisfaction in health facilities	,974		
Accessibility to local clinics	,965		
6. Factor: Satisfaction in parking facilities		2,079	5,7
Satisfaction in parking facilities			
Accessibility to parking areas			
7. Factor: Building and Traffic Density		2,057	5,7
This housing area is small with respect to its population	,873		
The buildings are too close to mine	,821		
In this housing area traffic density is high	,699		
8. Factor: Security of residential environment		1,962	5,4
Family's general safety in the housing area	,825		
Security against natural disasters	,779		
Transportation safety	,719		
9. Factor: Satisfaction in Public Transport		1,843	5,1
Accessibility to bus stops	,828		
Satisfaction in public transport facilities	,732		
Accessibility to relatives and friends	,672		
10. Factor: Satisfaction in infrastructure		1,743	4,8
Satisfaction in infrastructure (water, electricity, natural gas, telephone, cable TV)	,881		
Satisfaction in shopping facilities	,861		
11. Factor: Satisfaction in Social Activities		1,523	4,2
Satisfaction in social activities	,837		
Satisfaction in Social and Neighbourhood Relationships	,779		
12. Factor: Satisfaction in Open Areas		1,491	4,1
Accessibility to relaxing areas	,862		
Satisfaction in children's playgrounds	,574		
Accessibility to walking areas	,510		

Extraction method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization KMO: 0,63

4.3. Determinants of residents' satisfaction in gated and non-gated neighborhoods

Factor analysis has been used in order to specify the determinants of residents' satisfaction in housing and environmental quality. As a result of factor analysis, factor groups that increase the level of user satisfaction in housing and environmental quality have been specified.

Factor analysis method has been applied to the analysis of data's by using the SPSS package program. In the questionnaire form, among factor analysis techniques "Factor Processing Technique" has been applied to the 51 variables related to user satisfaction of gated and non-gated communities' environment.

Open space makes a vital contribution to the quality of life and to the achievement of a range of local governments' objectives. In terms of open space provision some communities are better served than others. As well as amount of provision, accessibility of facilities may also an important issue. In Istanbul, GCs were equipped with special amenities such as large variety of leisure activities, higher building standards and high-quality neighbourhood environmental infrastructures. Neighbourhood environmental structures include high-quality roads, walkways and landscapes, false-gated entrance pillars, luxurious street furniture, pocket open spaces.

In this research, gated single-family housing users who participated in the questionnaire rated the "**satisfaction in open and green areas**" the primary factor affecting housing environment satisfaction, which indicates that the

standards of green and open areas in gated single-family residences are sufficient in terms of user satisfaction (Table 4). High level of satisfaction is related to a planned settlement and the facilities provided for the community. In a planned 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 Amérigo & Aragonés (1990).

In Istanbul, the density of housing areas leads to green and open areas' being below standards, which also results in a decrease in quality of life. The most significant reasons of users for choosing especially gated residential areas are low density, the high standards of open and green areas, and the easy accessibility to the nearby green areas such as the woods or forests. The proximity of such residences to forested areas explains this situation.

According to the results of factor analysis, being the point of departure for gated residential areas, **"security of residential environment"** has appeared to be the aspect to which gated single-family housing users in Istanbul attach the highest importance. 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).

The third significant factor was termed **"satisfaction in social and neighbourhood relationships"**. To provide satisfaction in housing area, neighbour relationships and the importance of their quality bear parallelisms with the researches by Galster and Hesser (1981), Lansing et al.(1970), Deutschman (1972), Marans and Rodgers (1975). The finding stating that social homogeneity and social unity increase user satisfaction has similarities with the findings of Rent and Rent's (1978) research.

According to the statistical values presented Table 5, (Multi-family non-gated communities sample) the elements influencing these factor groups include satisfaction in accessibility central facilities, satisfaction in educational institutions, satisfaction in social and neighbourhood relationships, satisfaction in open areas, satisfaction in health facilities, satisfaction in parking facilities, building and traffic density, security of residential environment, satisfaction in public transport, satisfaction in infrastructure, satisfaction in social and neighbourhood relationships, satisfaction in open areas. "Satisfaction in accessibility to central facilities", and "Satisfaction in educational institutions" as the most important factor groups affecting multi-family non-gated residential areas user satisfaction with the housing environment they live in can only be explained by the fact that these housing areas are closer to all kinds of urban facilities as a result of their proximity to city centers with respect to single-family housing areas. Parallel results were reached by Türkoğlu (1997).

In these two case study areas the third significant factor groups affecting user satisfaction was same and termed **"satisfaction in social and neighbourhood relationships".** In the big cities, the traditional neighbour relationships, which are unique to the Turks, have recently faltered and

passed away particularly with women's access to professional life. The third aspect to which the housing users in the questionnaire attached importance in user satisfaction was determined to be social and neighbour relationships. The inhabitants of these residences generally state that they have the sense of community, and point out that compared to the life in apartment blocks in the city centre; their neighbour relationships are much closer.

5.   Conclusion

The researches carried out until now have demonstrated that quality of the residence and residential environment is influential in the overall resident satisfaction. In terms of environmental quality variables such as basic urban services and amenities, it has been determined that the housing areas within the scope the project have high standards. As a result of this fact, people from high income group tend to choose housing areas in the peripheries of the city.

The survey findings of this study have ascertained that accessibility to green and open areas, and security are significant to gated community user satisfaction. This result is parallel with the study results by Blankely and Snyder (1997), Wilson-Doenges, G. (2000), Low (2001), Roitman (2003) and Landman (2000, 2003), Atkinson, R., Blandy, S., Flint, J. & D. Lister, (2003), Blandy (2006). These results obtained in this study support the "definition of gated residence characteristics" that has been determined in the researches on gated residences in different countries of the world.

According to the results of factor analysis, although there is a ranking difference between the factor groups that gated and non-gated communities' users give the highest importance in the housing areas they live in, "accessibility to urban facilities", "security", "neighborhood relationships", "user status", and "accessibility to green areas" have been determined to be the issues of significance.

A further significant finding is that gated communities are mainly small-scale developments which are located in the peripheral districts of Istanbul. Security was confirmed as an important issue. The most important determinants of residential district preferences seemed difference between gated and non-gated communities' residents. Community safety seems to be more significant in affecting residents' of GCs than preferences of non-gated neighborhoods users'. The results of this research will contribute to identify the factors which households of gated and non-gated residential developments how they choose their inhabited areas. Findings can be used enhance the quality of housing environments.

This study has disclosed the necessity that the factors determining housing and environmental quality satisfaction should be taken into account during the planning process in order to increase user satisfaction in housing and environmental quality. Having considered the factors determining housing and environmental quality satisfaction, it will be possible to plan a more livable and more sustainable city life, which will thus provide higher level of user satisfaction.

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