

THE IMPACTS OF THE GATED RESIDENTIAL AREAS ON THE URBAN SPRAWL OF ISTANBUL

Lale Berkoz ¹, Emre Tepe ²

Department of Urban and Regional Planning,
Istanbul Technical University,
TURKEY.

¹ lberkoz@gmail.com

ABSTRACT

Within the globalization process, the form and extent of spatial changes and transformations in metropolitan cities have differed in central and peripheral areas. The affects of the social and spatial changes caused by globalization experienced worldwide are also seen within the Istanbul metropolitan area.

The uncontrolled urban growth in Istanbul in the last 25 years, which has been provoked by political expectations, has become beneficial for immovable investments that depend on annuity expectations. Growth dynamics depending on annuity not only leads to an uncontrolled sprawl in the city but also represents a fragmentary structure in which resources are distributed unevenly. Within this fragmentary structure, some urban areas become attractive domains for investment along with the market conditions; on the other hand, the spatial decomposition among unplanned growth areas, which lack sufficient substructure facilities, is accompanied by social decomposition.

Although the target development of Istanbul metropolitan area's macro form has been determined to be linear on east-west direction, the course of this development has come to threaten forested areas and water basins towards the north. The spatial distribution of the Gated Residential Areas is linked with the urban sprawl of Istanbul. The demand on the northern and north-eastern parts of the city in the aftermath of the 1999 earthquake in Istanbul has also enhanced this phenomenon.

People from high-income groups show a tendency to live in urban peripheries, because gated communities provide high-standard urban services to their residents. These communities were equipped with special amenities, large variety of leisure activities, higher building standards and high-quality housing environmental infrastructures.

This paper is intended to highlight the contradiction between gated residential settlements' healthy housing environment and their impacts on urban sprawl of Istanbul.

Keywords: Gated residential areas, urban sprawl, healthy housing environment, Istanbul.

INTRODUCTION

The impacts of sprawl development are apparent in many regions worldwide (Vitousek et al., Marzluff, 2001). Some of them are the Netherlands (Valk, 2002, Tjallingii, 2000), Japan (Sorensen, 1999), Russia (Loffe and Nefodova, 2001), Canada (Rothblatt, 1994), the UK (Breheny, 1995) and Israel (Razin, 1998). Sprawl is a new pattern of human settlement, which has come under increased criticism in recent years because of its negative environmental, social and economic effects. "Sprawl" is characterized by low-density

housing, non-contiguous, automobile dependent, residential and non residential development that consumes relatively large amount agricultural land and natural resource areas (Burchell et. al, 1998; Ewing, 1997; Gilham, 2002). Definitions based on land use tend to associate sprawl with the spatial segregation of land uses, and with the extensive mono-functional use of land for single-family residential development, free-standing shopping malls, industrial or office parks.

It is known that with respect to high-density urban areas with high-rise buildings, dispersed and widespread low-density urban development occupy more more land (Bullard et. al., 2000), which has significant negative effects on land and resources. The studies have revealed that urban dispersion involves serious costs compared to a compact development pattern (Benfield et. al., 1999). The dispersion leads to the rapid transformation of the forests, drinking water reservoirs, and agricultural areas in the peripheries of urban areas into the existing settlements (Gillham, 2002). Under these circumstances, drinking water resources, wild life, the quality of the existing settlements, as well as the quality of all natural and physical settlements are affected (Matlack, 1993; Zuidema et. al., 1996; Mc Donnell et. al., 1997; Mc Kinney, 2002). Hence, urban dispersion not only leads to the exhaustion of natural settlements, but also deteriorates and separates them from other natural areas (Marzluff and Restani, 1999; Marzluff, 2001).

Newly built single-family gated housing areas developed at the urban peripheries have become the subject of much criticism in planning circles because of the environmental impacts on natural resource qualities.

The emergence of GCs depends on several reasons and they have a lot of consequences on urban socioeconomic and spatial structures. Living in gated residential areas continues largely to be a privilege of the wealthier urban residents.

Gated communities -enclaves of residents surrounded by walls, often with security guards- are becoming increasingly popular in Istanbul. This transformation began in the 1990's when the high-income groups, who had accumulated wealth in the aftermath of the 1980's, chose to escape from the dense life of the city center, leaving the heterogeneous residential areas behind. Instead, they showed a tendency to settle in isolated residential areas. As a result, new residences started to spread around the peripheries in Istanbul, whose developmental features complied with the expectations of living shared by families of the same cultural background and income level (Berkoz, 2010).

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).

The literature in this field has mainly focused on social and psychological issues, such as the impact of gated communities on social relationships. On the other hand, there are a few studies analyzing the spatial distribution of gated communities, which is linked to urban

sprawl. Therefore, changes occurring with the growth and density of residential areas will give us an idea about the potential tendency of growth in the future.

THE RISE OF THE GATED COMMUNITY SPRAWL IN ISTANBUL

Sheltering one fifth of Turkey's population and gaining in power as the financial and cultural capital, Istanbul is the largest metropolis in Turkey. Especially in the last two decades, Istanbul has been undergoing a rapid transformation, which is partly caused by globalization trends (Erkip, 2000). Istanbul plays a pioneering role in the country in terms of economic, cultural and social issues. The city had a mono-centric structure until the end of the 1970s, which began to transform with the constructions of the Bosphorus Bridge and ring roads in 1973. These new ways of access have led to spatial transformations in Istanbul, which resulted in the shift of the CBD of the city from Eminönü and Beyoğlu towards Şişli and Beşiktaş, as well as the development of Kadıköy on the Asian side and Bakırköy on the European side as the first-tier sub-centres. With new highways, which followed the construction of the above mentioned roads, the borders of the metropolitan area have also extended. In addition to these, low land prices in suburban districts and the increase in private vehicle ownership accelerated the process of decentralization in the city's structure.

Cross-demographic rates of the two sides in Istanbul demonstrated an increase from the West to the East between the years 1970 and 2000. In 1970 75.56% of the population was settled in the European side, whereas this rate went down to 65.29% in 2000. In other words, while 22.44% of the population was living in the Asian side in 1970, this rate increased to 34.53% in 30 years. When the rate and changes of population growth are investigated, it is observed that the acceleration of population growth in the Western side of the city was very high between the years 1970 and 1980 (Table 3). The opening of the first Bosphorus Bridge in 1973 and the constructions of new highways, as well as an increase in the rate of private vehicle ownership contributed to the population expansion towards the Eastern parts of the city during this period (Berköz, 2008).

The 80's constituted the period when Turkey underwent structural change in economy. Small and medium-size entrepreneurs were discarded, which had direct reflections on the construction sector in terms of high capital and technology. The Mass Housing Law forced in 1984 accelerated the construction of big-size projects, encouraging new implementation by cooperatives as well as private sector housing entrepreneurs.

In 1984, the government identified its urban policies, one of which was to make Istanbul a centre of international trade, culture and finance throughout the Middle East and Europe. By doing so, the government aimed to attract international capital to Istanbul (Keyder, 2000). The liberal policies adopted by the government in this period lead to an increase in the number of international banks and trade companies. To this purpose, the infrastructure projects such as the construction of the highways and the 2nd Bosphorus Bridge, as well as the extension of narrow roads were carried out (Kocabaş, 2006). These basic policies triggered substantial changes in the profile of the city centre. Many large shopping centres were opened as new venues of consumption. Industrial facilities, which had been located within the city centre until the 1980s, dispersed to the peripheral districts due to the increased prices in the city centre (Erkip, 2000).

With the opening of the second Bosphorus Bridge in 1988, the gradual increase in the transportation connection on both sides also increased the mobility of high-income groups, who had the highest level of private car ownership in the metropolitan area. Thus, their spatial choices of housing area shifted to prestigious areas in the East Side of Istanbul (Berköz, 2006).

The predominance of services sector in Istanbul also brought about changes about employment, for the development of finance sector generated a rich social segment. In order to meet the needs of this segment, luxurious community housings were constructed on the outskirts of the city.

Since 1990 residential areas have expanded toward the land side of the city, following the highways connected to the first and the second Bosphorus Bridges. Therefore, sprawling primarily began in the areas between this route and the coastline, gradually spreading toward drinking water basins in the north.

In the 1990's, heterogeneous housing areas inside the city started losing popularity among the urban elite class, who instead showed a tendency towards isolated and homogenous areas far from Istanbul's density. This tendency has resulted in the rapid growth of mass housing areas in the urban peripheries, which include a life style enabling the expectations of living with families at the same cultural and income level and which consist of less dense single-family housings (Berkoz, 2008).

Big pieces of land on the urban peripheries that enable the development of such homogenous housing areas and low prices of land are the reasons for the desirability of these areas in the bosom of nature, which meet the demands of high-income groups. The demand on the northern and north-eastern parts of the city in the aftermath of the 1999 earthquake in Istanbul has also enhanced this phenomenon. Safety, social comfort and villa-type walls are the general characteristics of these communities.

People from high-income groups show a tendency to live in urban peripheries because these communities provide high-standard urban services to their residents. Moreover, the availability of lands big enough for the development of such communities, lower land prices with respect to the city centre, and the green belts surrounding these lands are among the reasons why peripheral areas are desirable spaces to fulfil the requirements of high-income groups. This phenomenon has accelerated with the demand for the northern and north-eastern districts of the city since the 1999 earthquake in the Marmora Region. However, the annuity in sprawl developments has recently been threatening the forested areas and drinking water basins in the northern regions, and it has also rapidly given rise to political concessions (Berkoz, 2008).

As a result, new residences started to spread around the peripheries in Istanbul, whose developmental features complied with the expectations of life shared by families of the same cultural background and income level. These communities 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. Encouraging car-ownership and use, gated communities have various consequences: congestion and pollution at considerable levels, and a decrease in a sustainable public transport system are two examples of these consequences. They also increase the appearance of suburban car-based residential sprawl, leading to longer commute and congestion (Berkoz, 2006).

Urban sprawl consumes land faster than population growth. According to the results of a research that analyses spatial changes from 1987 to 2001 based on the satellite views of Istanbul's European side (Kaya & Curran, 2006), urbanized areas covering 11,800 ha in 1987 increased by 14,000 ha in 14 years and reached 26,500 ha. Industrial areas also conveyed an increase from 1,700 to 4,100 ha. It has been observed that the urbanized areas of the European side of Istanbul conveyed an increase rate of 116% in 14 years, while the increase

rate of industrial areas in the same period is 140%. However, the population of the European side increased by only 83.3% in the period of 1985-2000 (SIS, 2000), which demonstrates that urban sprawl exceeded population growth on the European side of Istanbul.

According to the study results by Kaya & Curran (2006), the rate of green areas on the European side of Istanbul decreased by 12% from 1987 to 2001 becoming 66,000 ha which initially stretched to 75,000 ha. Moreover, agricultural areas decreased by 23%, and also urban sprawl on water basins rapidly increased.

During the 14-year period, forest and green areas decreased by 9,134 ha (12.13%) and the agricultural and bare soil class by 19,656 ha (24.79%). In contrast, the urban and industrial areas increased by 17,290 ha (128.45%) due to dense immigration (Table1). According to the results of this study, the highest increase rate in the European side was observed in the period of 1992-1997 (Kaya & Curran, 2006).

While the average population density in Istanbul was 1,280 persons/km² in 1990, this figure raised to 1,928 persons/km² in 2000. The density change in Istanbul between the years 1990 and 2000 was 50.63%. When the density change in Istanbul between 1990 and 2000 is examined, it is seen that there is a decrease in central districts with a rate of 9.18%, but an increase in peripheral areas with a rate of 106.47%, which results in a density twice as much as the density change of Istanbul (50.63%).

Assessing the number of buildings in Istanbul in terms of increase rates, we see that between 1990 and 2000 there was a 25.15% increase in the central districts, while in the peripheral districts the average of the increase rate was 78.46%. It is seen that the increase rate in peripheral districts is above the average of Istanbul (61.67%).

In summary, between 1990 and 2000 the population change in Istanbul demonstrated an increase by 39.23%, and the growth rate of population was found out to be 39.9%. Thus, population change and the change in population density occurred in the same rate. In core districts, the average population change decreased by 29.38%, resulting in a density change rate of -9.18%. This outcome may be related to the increase in number of buildings in core districts (23.15%). Average population change and density change rates in peripheral districts have been found out to be very close to each other, the first one with 107.87% and the second with 106.46% (Berkoz, 2010).

RESEARCH METHOD

The sprawl of gated communities in the Istanbul metropolitan area was determined by both field study implemented in the spring of 2006 (Berkoz) and Tepe's master thesis study between 2007 – 2010. The determined GCs in the field study were drawn on recent satellite maps by using Arc Map. The distribution of gated communities among the districts of the Istanbul metropolitan area can be seen in Figure 1. As shown in the map, most of the communities are in the peripheral districts.

Analysis of Single-Family Gated Communities in Istanbul

Location

The research conducted for this study consisted of case studies of 155 single-family, multi-family and mixed GCs. There are 88.300 housing units in these communities. Most of the GCs in Istanbul (92.9 %) were constructed after 1990 (See Table 1). The highest number of GCs is in the peripheral districts (Buyukcekmece, Sariyer, Uskudar, Pendik, and Tuzla districts) which bear communities constructed after 1990. 14.8% of 155 GCs are in central districts, while 85.2% are in the peripheral ones.

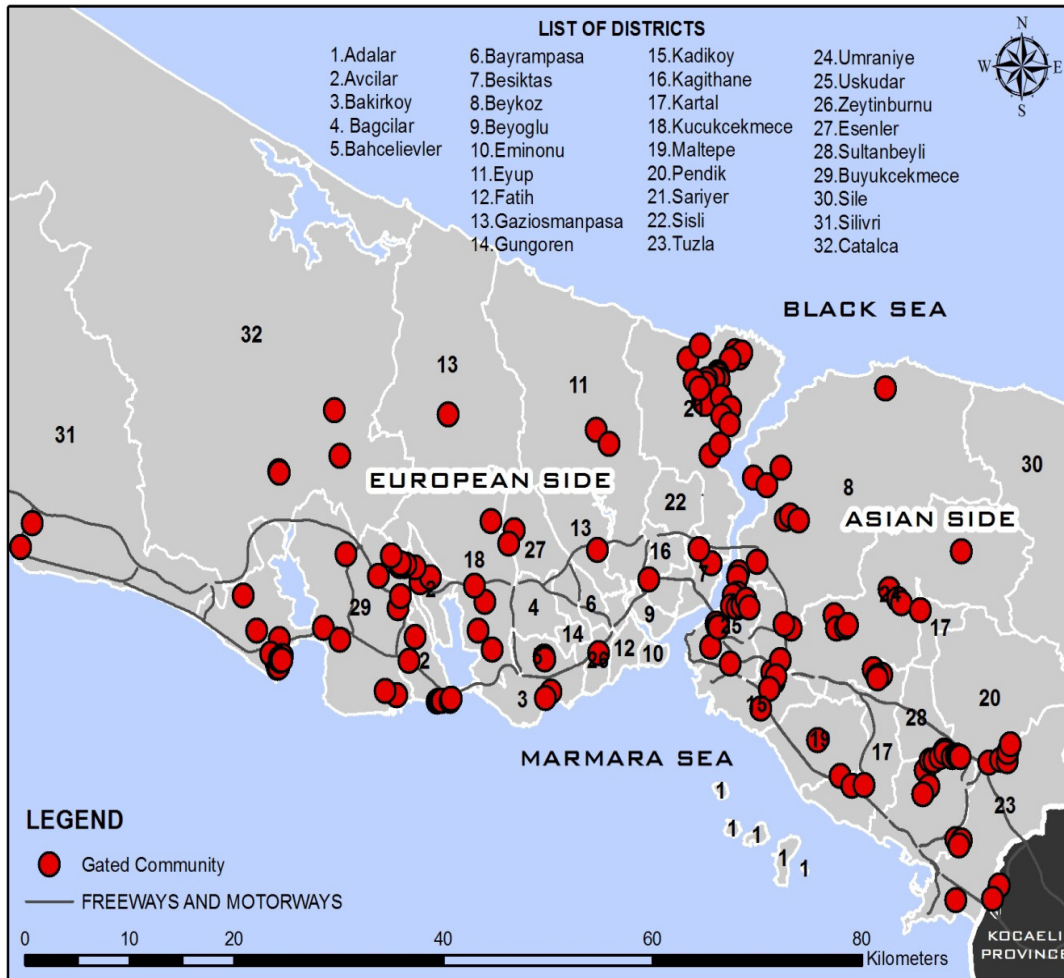


Figure 1. Dispersion of GCs

Construction years

Mainly gated housing development have emerged since the beginning of 1990 and 92.9 % of current GCs were constructed within 20 years (See Figure 2). These development especially observed in peripheral districts. In central districts, only significant development is observed in Uskudar between 2000 – 2005. During the period, 12 GCs were constructed by real estate firms and the district suddenly became an attractive point for gated housing market.

Gated housing development is observed mostly in peripheral districts which have large vacant lands. Regarding the data which are presented in Table 1, Buyukcekmece and Sariyer are two important gated housing development areas. In Buyukcekmece gated housing developments started in 1995 and continue the development increasingly. Today 28 GCs exist in Buyukcekmece. Another important peripheral district is Sariyer.

Gated housing development began drastically 5 years earlier than Buyukcekmece and today the development has almost stabilized.

In addition to Buyukcekmece and Silivri districts, Umraniye, Kartal and Tuzla also became an attractive area for gated housing development in recent years. These three districts are located in Asian side of Istanbul and have a lot of vacant lands. Therefore many construction firms keen to obtain cheap land and establish gated housing units within these districts.

Table 1. Matrix of GCs by construction years

<i>District</i>	<i>1984-1989</i>	<i>1990-1995</i>	<i>1995-1999</i>	<i>2000-2005</i>	<i>2006-2010</i>	<i>Total</i>	
<i>Central</i>	B akirkoy	0	0	0	0	2	2
	B esiktas	2	0	0	0	0	2
	K adikoy	0	0	0	0	5	5
	U skudar	0	1	0	12	1	14
	Centred Total	2	1	0	12	8	23
<i>Peripheral</i>	A vcilar	0	0	2	5	1	8
	B ahcelievler	0	0	2	0	0	2
	B eykoz	2	2	2	3	0	9
	B uyukcekmece	0	1	9	4	14	28
	C atalca	0	0	0	2	2	4
	E senl er	0	0	0	1	1	2
	E yup	1	0	0	1	0	2
	Gaziosmanpasa	0	0	0	0	2	2
	K agithane	0	0	0	1	0	1
	K artal	0	0	0	1	5	6
	K ucukcekmece	0	0	0	1	4	5
	Mal tepe	0	0	0	0	1	1
	Pendik	5	1	2	1	3	12
	Saviyer	1	13	2	6	2	24
	Silivri	0	0	0	0	2	2
	Tuzla	0	0	0	4	7	11
	U mraniye	0	0	1	9	2	12
Zeytinbumu	0	0	0	0	1	1	
Peripheral Total	9	17	20	39	47	132	

Housing type

155 gated communities have been detected within the scope of this study. There are 88.300 housing units in these communities. These housing areas are consists of three main housing types and these are; single-family, multi-family and mixed GCs. Unquestionably, Figure 3 illustrates dominant housing area type is single-family with 62% (96 housing areas) in Istanbul. Furthermore, second dominant type is multi-family housing units in Istanbul with 30% in total (46 housing areas) and last GC type is mixed type.

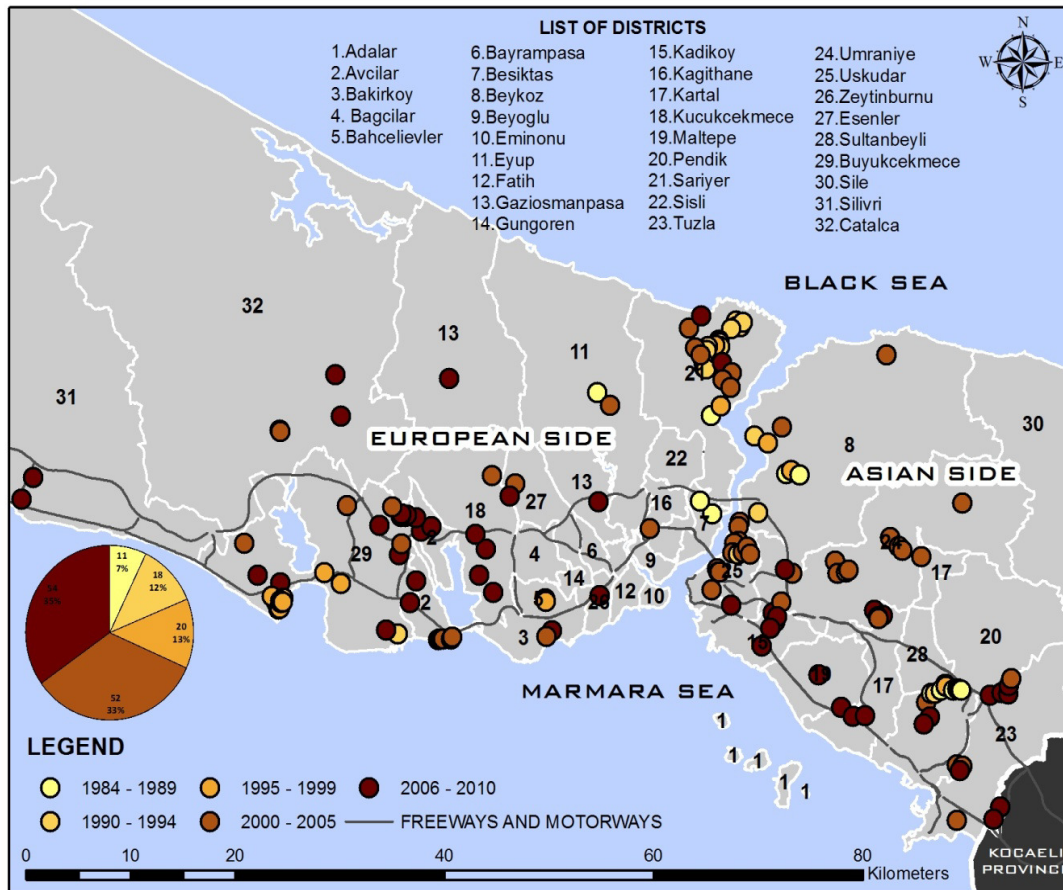


Figure 2. GCs by construction years

Accessibility

It is assumed that while multi-family GCs are mainly located along the connection of D-100 highway and TEM motorway, single-family GCs are located in peripheral and low density areas of Istanbul. Mixed GCs tend to settle in close proximity of mass housing areas.

Due to low-density and cheap land requirement of single-family GCs, these housing units mainly are located in peripheral areas of Istanbul. But multi-family and mixed GCs tend to be located in a close proximity with existing mass housing areas and main road connections. Table 2 demonstrates that, Sariyer which is an example for peripheral district houses has 22 single-family GC inside of its boundary, Buyukcekmece which is close to main roads and has 12 multi-family GCs. This pattern is quite simply observed by looking at Figure 3.

Berkoz and Tepe (2008) determined that accessibility and currently preferred transport modes by comparing multi-family and single-family gated communities. The vast majority of GCs are located in areas that are more than 30 kilometres distant from the core of Istanbul. Furthermore, this vast majority of GCs in Istanbul have limited access to new high capacity public transport systems. According to study of Berkoz and Tepe (2009), 97% of total selected mass housing areas are located more than 1 km from the nearest railway stop and 100% of total selected mass housing areas are located more than 1 km from the nearest seaway stop. Therefore users must use feeder buses to reach these high capacity transport systems and the situation reduces the usability of public transport system. In addition the situation enhances private car use. Especially, due to peripheral-oriented single-family GCs

have limited access to public transportation. But multi-family GCs have moderate access to these public transportation in Istanbul.

Table 2. Matrix of single-family, multi-family and mixed GCs in Istanbul

	<i>District</i>	<i>Single-family</i>	<i>Multi-family</i>	<i>Mixed</i>	<i>Total</i>
<i>Central</i>	B akirkoy	0	1	1	2
	B esiktas	2	0	0	2
	K adikoy	0	3	2	5
	U skudar	12	2	0	14
	Centred Total	14	6	3	23
<i>Peripheral</i>	A vcilar	7	1	0	8
	B ahcelievler	2	0	0	2
	B eykoz	8	0	1	9
	B uyukcekmece	12	12	4	28
	C atalca	2	2	0	4
	E senl er	0	2	0	2
	E yup	2	0	0	2
	Gaziosmanpasa	0	2	0	2
	K agithane	0	0	1	1
	K artal	2	3	1	6
	K ucukcekmece	0	5	0	5
	Mal tepe	0	1	0	1
	Pendik	9	3	0	12
	Saviyer	22	1	1	24
	Silivri	0	2	0	2
	Tuzla	0	65	0	11
	U mraniye	10	1	1	12
	Zeytinbumu	0	0	1	1
Peripheral Total	82	40	10	132	

Size of Community

In terms of number of housing units, 45 % of GCs have less than 100 units and 22 % of GCs have units between 101 and 500. It can be assumed that existing GCs mostly are small scale housing areas. Especially, single-family GCs are designed with limited housing units. Multi-family and mixed GCs provide much more housing units to users, because these GCs are mostly sold with reasonable price to middle income families.

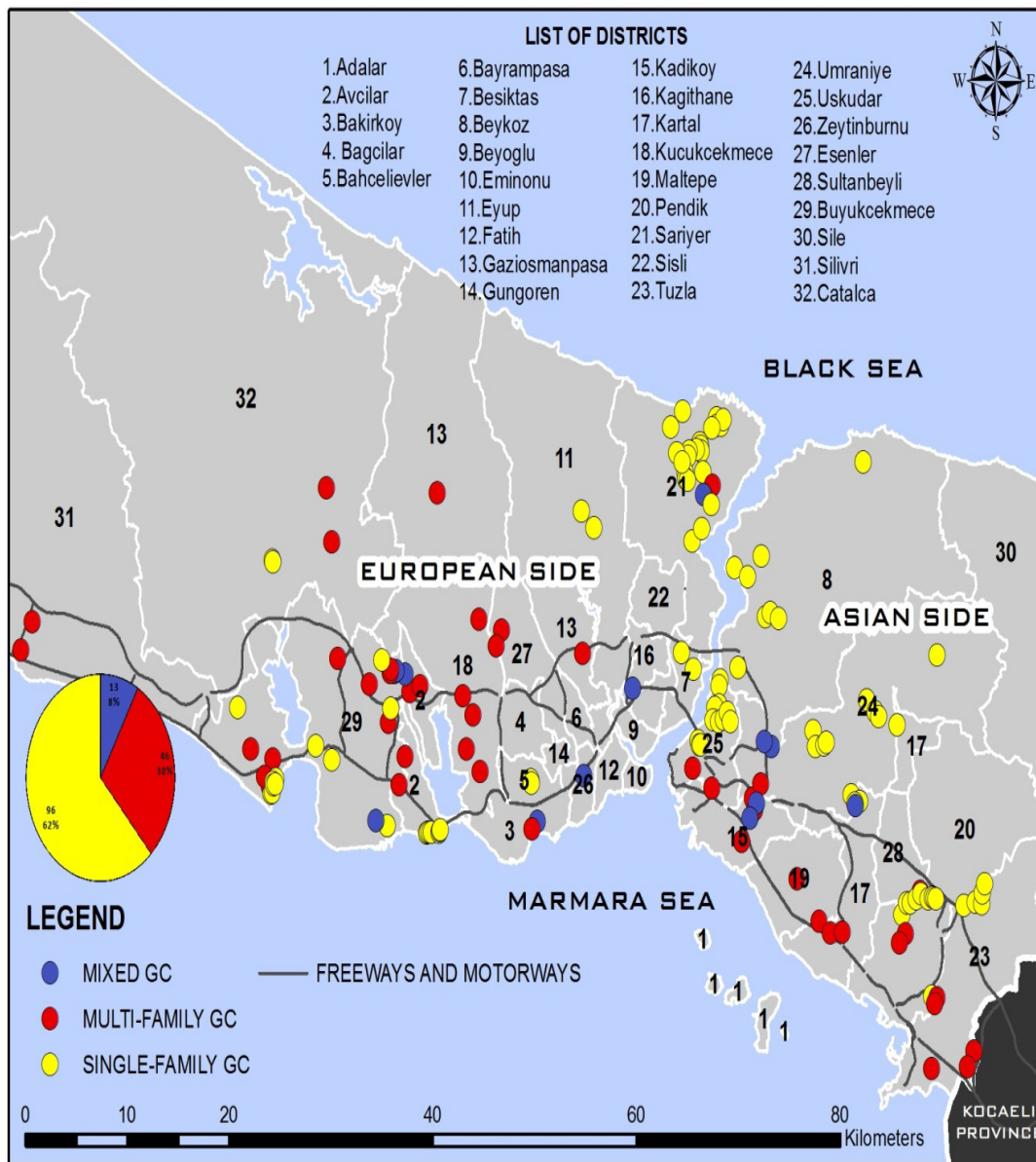


Figure 3. Single-family, multi-family and mixed GCs in Istanbul

48.5% of GCs in Istanbul accumulate around the districts of Sariyer, Beykoz and Buyukcekmece, which bear the highest number of such communities. Sariyer and Beykoz districts are situated in the north-western and north-eastern parts of Istanbul, which have the most expensive land values in Istanbul. Moreover, compared to other districts, the total number of housing units in the above-mentioned ones is very high. 78.2% of the total housing units of GCs in Istanbul are in these districts.

Single-Family GCs

The single-family housings were settled in the vacant fields in the central districts before the 80's, the saturation of city centers with growth, and related to this, the increase in the value of lands have lead GCs to settle in the empty and inexpensive lands in urban peripheries (Berkoz, 2008). 48.5% of GCs in Istanbul accumulate around the districts of Sariyer, Beykoz

and Buyukcekmece, which bear the highest number of such communities. Sariyer and Beykoz districts are situated in the north-western and north-eastern parts of Istanbul, which have the most expensive land prices in Istanbul. Moreover, compared to other districts, the total number of housing units in the above-mentioned ones is very high. 78.2% of the total housing units of GCs in Istanbul are in these districts.

Table 3. Matrix of housing units of GCs

	<i>District</i>	<i>4-100</i>	<i>101-500</i>	<i>501-1000</i>	<i>1001-2000</i>	<i>2001-7222</i>	<i>Total</i>
<i>Central</i>	B akirkoy	0	1	1	0	0	2
	B esiktas	2	0	0	0	0	2
	K adikoy	0	1	1	1	2	5
	U skudar	13	1	0	0	0	14
	Centred Total	15	3	2	1	2	23
<i>Peripheral</i>	A vcilar	7	0	1	0	0	8
	B ahcelievler	2	0	0	0	0	2
	B eykoz	5	1	2	1	0	9
	B uyukcekmece	9	6	8	3	2	28
	C atalca	2	0	0	1	1	4
	E senl er	0	0	1	0	1	2
	E yup	1	1	0	0	0	2
	Gaziosmanpasa	0	0	1	0	1	2
	K agithane	0	1	0	0	0	1
	K artal	0	2	4	0	0	6
	K ucukcekmece	0	0	3	0	2	5
	Mal tepe	0	0	1	0	0	1
	Pendik	8	0	1	3	0	12
	Saviyer	15	7	1	1	0	24
	Silivri	0	0	0	1	1	2
	Tuzla	0	8	1	2	0	11
	U mraniye	6	4	1	0	1	12
	Zeytinbumu	0	1	0	0	0	1
	Periphara Total	55	31	25	12	9	132

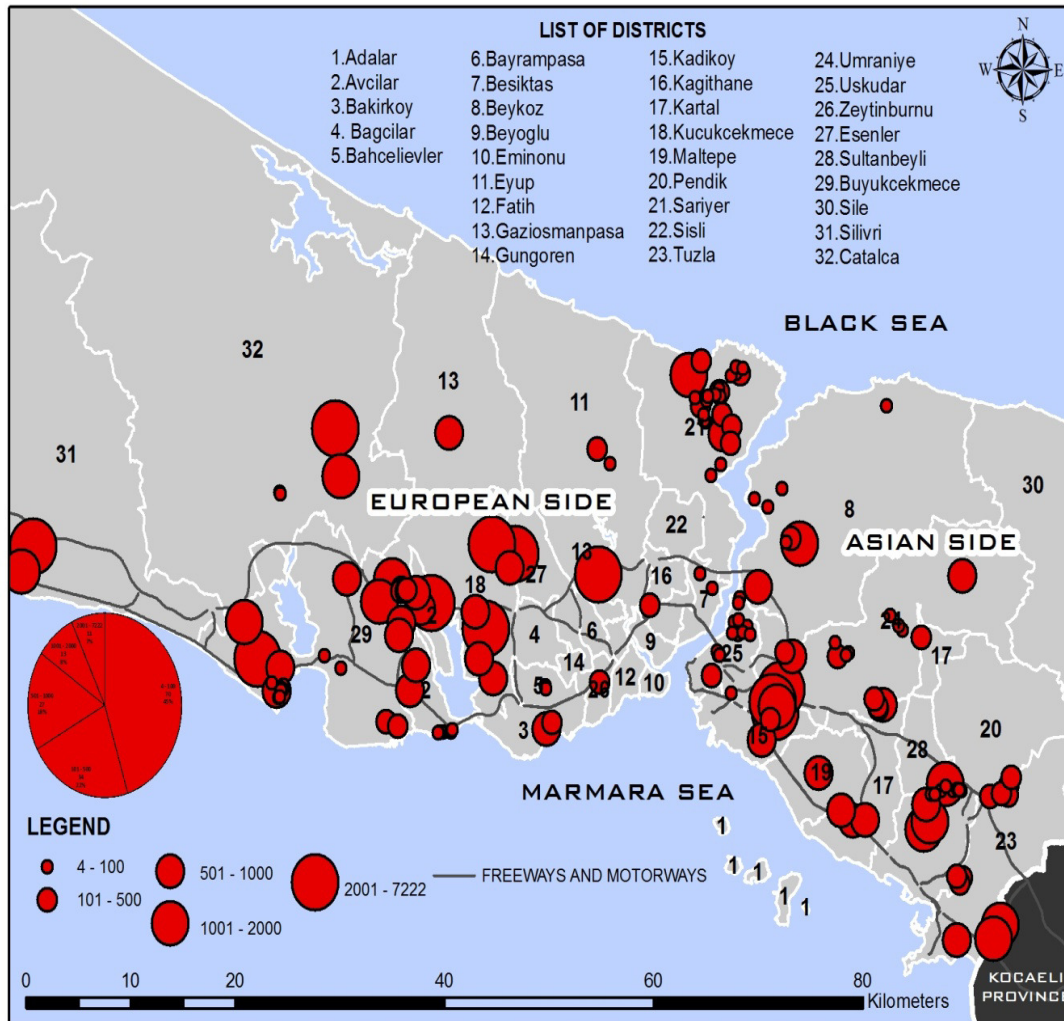
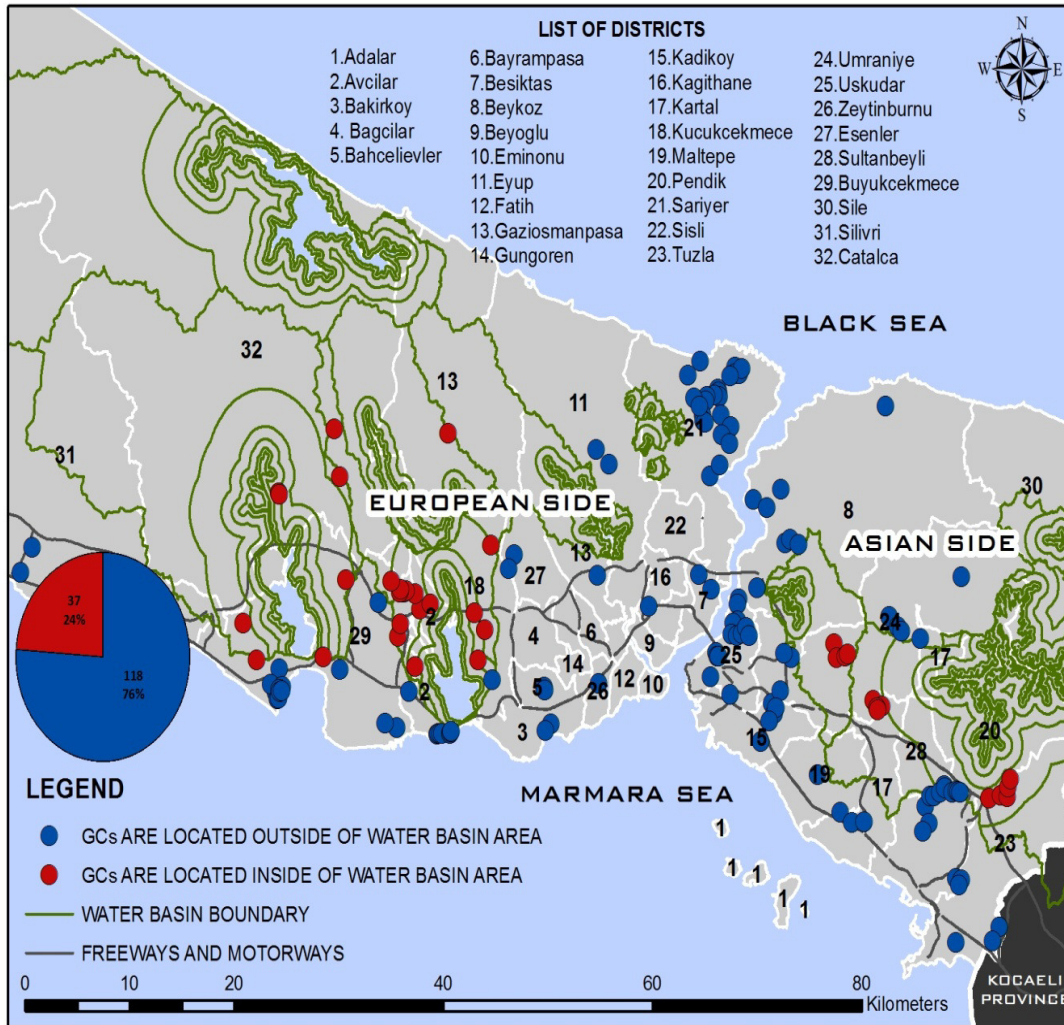


Figure 4. Housing units of GCs in Istanbul

GCs in water basins area

The major water basins in Istanbul are Omerli, Elmali, Kucukcekmece, Buyukcekmece, Alibeykoy, Terkos, Sazlidere, and Darlik. These basins constitute 60% of the city's area. During the transition of municipalities built on the basins from village status to urban status, very limited urban sprawl was anticipated to meet the requirement of new settlement areas. However, as in the cases of Sultanbeyli and Sarigazi, the basins underwent an intense sprawl. A settlement area of 7,000 ha spans throughout the basins. These areas have generally developed in an unplanned and unlicensed way.

Due to existing vacant and low-price lands in water basin areas of Istanbul, some of the construction firms tend to conduct some GC's projects within these areas and construct large amount of GCs in water basin area. In this study, 24 % of total GCs are located in water basin areas (See Figure 5). Looking at housing types of these 37 GCs which are located inside of water basin boundary, unsurprisingly 51 % (19 GCs) of them are single-family, and 38 % (14 GCs) of them are multi-family, and lastly 11 % (4 GCs) of them are mixed. %95 of these 37 GCs was constructed between 2000 – 2010. It can be assumed that economic drawbacks of construction firms drive them into cheap vacant lands in urban fringes.



Some of the settlements in the drinking water basins of the Istanbul metropolitan area were within the borders of district municipalities connected to the Metropolitan city and their adjacent area; while others resided within the borders of independent first tier municipalities. The fact that administrative borders do not intersect with basin borders affects planning approaches. Fragmentary zoning plans or regulations in the basins and related developments in these fields occur independently of the main decisions of superior physical plans. Moreover, illegal unlicensed constructions have occurred, which fall outside the scope of law and regulations in these fields. Zoning plans covering these areas have encouraged rapid construction.

In this respect, a significant problem related to the city's sprawl was out of question from the 1930s to 1990s because access to the city centre was not convenient then. Constructions of the Second Bosphorus Bridge and the highways at the beginning of the 1990s increased accessibility. The areas became centers of attraction due to the demand of those escaping from urban life to dwell in the urban peripheries, the convenient accessibility of these areas to the city centre, and the low prices of land. As a result, construction pressure on first tier municipalities increased. Gated residences that developed within the borders of first tier municipalities had the municipality confirm the partial masters involving the sprawl conditions that they determined themselves. Consequently, these first tier municipalities

developed especially on basins and forests independent of the development principles of Istanbul's superior master plan.

The legal status of Metropolitan Municipalities was rearranged by the Metropolitan Municipality Law No 5216 in July 23rd, 2007. With this Law, Metropolitan Municipality was authorized to inspect the zoning implementations of district and first tier municipalities.

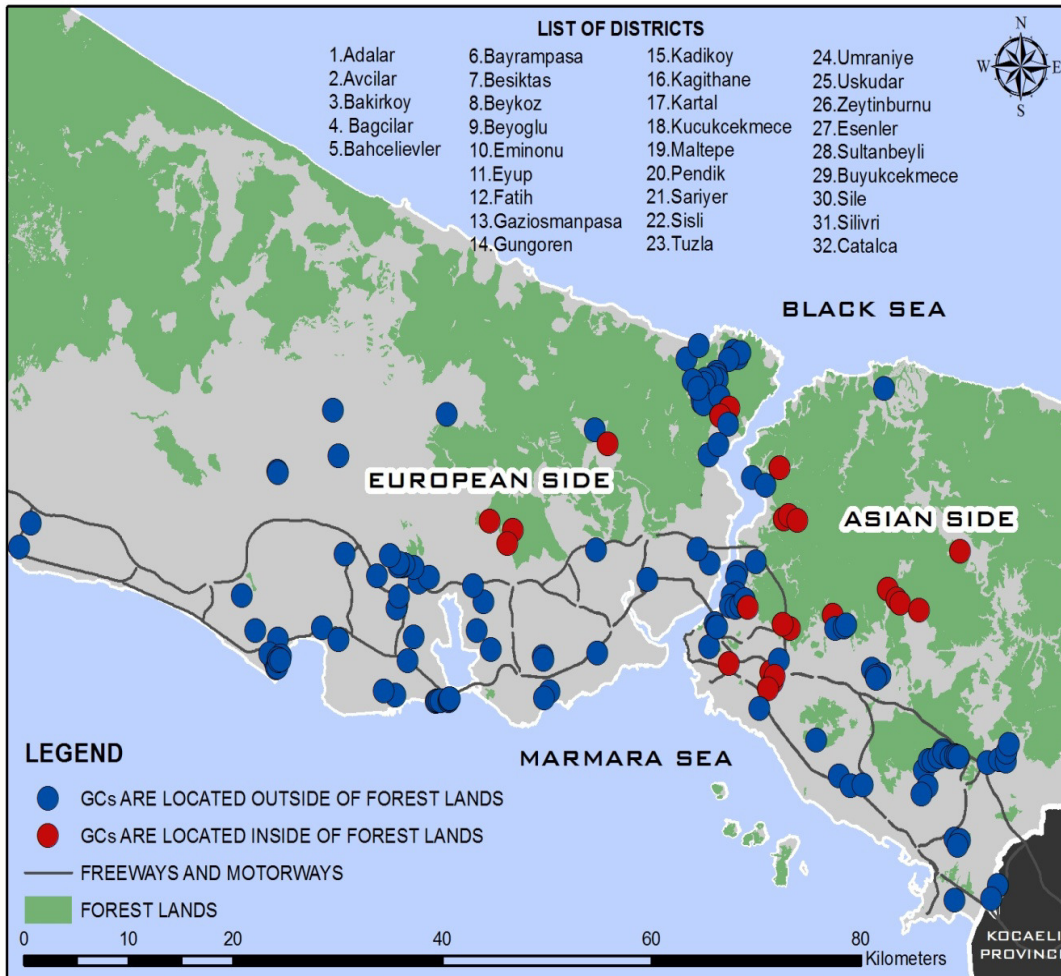


Figure 6. GCs in forest areas

To sum up, according to the Metropolitan Municipality Law No 3030 forced in 1984, as first tier municipalities were defined they were not connected to the Metropolitan City and thus could independently make plans contrary to the decisions of the superior physical plan. Since 1990 residential areas have expanded toward the land side of the city, following the highways connected to the first and the second Bosphorus Bridges. Therefore, sprawling primarily began in the areas between this route and the coastline, gradually spreading toward Alibeykoy and Omerli drinking water basins in the north. Gated residences in the urban peripheries occurred after the 1990s with the city's sprawl. After this date, pressure on first tier municipalities increased. These local plans, which did not consider the development principles of master plans and thus which developed in dependently, granted too many sprawl conditions. As a result of the intense sprawl in the city's water basins, and coastal and forested areas, making a new legal amendment became a necessity in 2004 (Berkoz, 2010).

GCs in forest areas

Private forest lands were opened to construction with the amendments on the Forestry Law in 1986 and 1987 once the required permission was taken from the Ministry of Forestry and related district municipalities. Thus, gated communities constructed in the groves under private ownership have generated the privatization of public space. As a result of the construction of gated communities, the groves along the Bosphorus, which had been open to public use for centuries though under private ownership, were closed off from public space (Kurtulus, 2005). The confinement of the city's historical and cultural heritage contradicts with the principles of transparency, accessibility, difference and equality that the urban plan originally claimed to assume.

Forest lands are mainly located in northern part of Istanbul, or at least they remain in there. However these lands are protected by the Forest Law, in some particular cases, limited constructions have been occurred. Within this study, 15 % (24 GCs) of selected 155 GCs are detected in forest lands (See Figure 6). 87 % of them were constructed between 2000 – 2010 and half of these constructed GCs are single-family, 29 % (7 GCs) of them are multi-family and rest of them mixed GCs. It can be assumed that recently forest lands have being consumed by construction firms in order to establish mostly single-family GCs with a forest landscape concept.

CONCLUSION

The findings of this study are: although the target development of Istanbul metropolitan area's macro form has been determined to be linear on east-west direction, the course of this development has come to threaten forested areas and water basins towards the north. The spatial distribution of the gated communities is linked with the urban sprawl of Istanbul. Gated communities consisting of single-family housings are generally developed on low-density big lands, leading to rapid sprawl in Istanbul. These communities also cause social and physical polarizations since they are disconnected and isolated from their environment.

These residential areas have been planned as local plans independent of the city's master plan. Thus they make up spots disconnected from other land uses on the plan. In this respect, it is crucial and urgent to develop strategies regarding the rapid sprawl of the gated communities within the development of housing areas in the Istanbul metropolitan area. Otherwise, the rapid destruction of natural areas and the Bosphorus are at stake.

During the recent spatial transformation process of Istanbul, large scale real estate developments carry out planning approach which is based on development-led approach instead of plan-led approach. Therefore relationship of these projects with decisions of urban land use, infrastructure and transportation system is neglected because new housing developments are only considered as project based initiative. These type developments generally are conducted independently from higher level master plan. It means that there is no authority of planning and as a result of these developments, public transportation cannot satisfy this huge traffic demand which is driven from new developments and private car uses are increased in these areas. Finally, current roads do not continue to sustain additional traffic movements which are passing on roads every day.

The vast majority of gated communities are located in areas that are more than 30 km. distant from the core of Istanbul. Especially the majority of single-family GCs are located in the peripheral districts in the north of Istanbul. In this respect, they are not directly connected to sea and railway access. Despite the good connection of large-scale multi-family GCs to the

city's railway and land public transportation systems, the high rate of car ownership leads to the preference of private car use by high-income groups (Berkoz, Tepe, 2008).

In conclusion, due to low-density and widespread developments, gated communities have already occupied large amount of vacant lands of Istanbul which are mainly located in the northern part of Istanbul and these lands are mainly environmentally sensitive lands. As an indispensable result of the gated housing development, sprawling of urban land is accelerated. It is seen that gated housing development is inappropriate with ecocity approach because the development reduces relationship between urban functions. Thus, briefly it increases commuting time, traffic volume, air pollution and it causes consuming reserved vacant urban lands in urban peripheries.

REFERENCES

- Berköz, L. (2010). Single-Family Gated Housing Sprawl in Istanbul: Environmental Quality and Satisfaction, Germany: *VDM Verlag Dr. Müller* (ISBN: 978-3-639-25182-1).
- Berköz, L. (2008). İstanbul'da Korunaklı Tek-Aile Konutlarının Yereşçimi Özellikleri, ITU *BAP Reseach Project* (pr. No: 31981)
- Berköz, L. & Tepe, E. (2009). Accessibility of New Transportation Systems in Mass Housing Areas in Istanbul, 49. *ERSA Congress, Lodz, Polonya, 25-29.08.2009*, USB-O_I_1_307.
- Berköz, L. & Tepe, E. (2008). *Gated Residential Areas in Istanbul: Private cars versus public transport systems*, 48. *ERSA Congress, University of Liverpool, Liverpool, 27-31.08.2008*, Papers in USB-879.
- Coliers, R.(2003). *Gayrimenkul Piyasası 2003- Türkiye, İstanbul*.
- Dokmeci, V., Boduroglu, H. & Berköz, L. (1996). *Cities of Emlakbank, İstanbul: Creative Yayıncılık ve Tanıtım Ltd.*
- Fulton, W., Pendall, R., Nguyen, M. & Harrison, A., (2001). Who Sprawls Most? How Growth Patterns Differ Across the U.S., Center for Urban & Metropolitan Policy, The Brookings Institution, Washington, D.C.
- Kaya, S. & P. J. Curran (2006). Monitoring urban growth on the European side of the İstanbul metropolitan area: A case study. *International Journal of Applied Earth Observation and Geoinformation*, 8, 18-25.
- Kurtuluş, H. (2005). İstanbul'da Kapalı Yerleşmeler: Beykoz Konakları Örneği, In H. Kurtuluş (eds.), *İstanbul'da Kentsel Ayrışma*, İstanbul: Bağlam Yayıncılık, 161-186.
- Perouse, J. F. (2003). *Siteler Sosyal Çatışma yaratacak*, Tempo Magazine, 29th November 2003.
- Özçevik, Ö. G. (1999). *Metropoliten Kent Çeperindeki Yerleşmelerde Yapısal Dinamikler- İstanbul Metropoliten Kent Çeperi Örneği*, Yayınlanmamış Doktora Tezi, İTÜ Fen Bilimleri Enstitüsü.
- Tepe, E. (2010). *İstanbul'da Yeni Gelişen Büyük Ölçekli Konut Yerleşimlerinin Değerlendirilmesi: Büyükçekmece ve Tuzla Örnekleri*, Yayınlanmamış Y. Lisans Tezi, İ.T.Ü. Fen Bilimleri Enstitüsü.
- Tezer Kemer, A. (2004). Modelling of land use-transportation interaction in Istanbul, *ITU A/Z Journal of the Faculty of Architecture*, 1(2), 12-25.
- Tezer, A. & Zeren Gülersoy, N. (1996). *İstanbul'un Planlaması ve Kentsel Gelişim Sürecinin Değerlendirilmesi*, Habitata Doğru İstanbul 2020 Sempozyumu Bildiriler Kitabı, İ.T.Ü. Mimarlık Fakültesi Baskı Atölyesi, İstanbul, pp. 175-186.