THE REALIZATION OF THE DETAILED LOCAL PLANS IN URBAN AREAS IN TURKEY: A MODEL

Sevkiye Sence Turk

Istanbul Technical University

Faculty of Architecture

Department of Urban and Regional Planning

80191

Taskisla / Taksim / Istanbul / TURKEY

Tel:90-212 2931300 Ext:2273

Fax:90-212 2514895

e-mail: sstu52@hotmail.com

ABSTRACT:

The main objective of the realization of the detailed local plans in urban areas is to constitute the healthy urban structure, to provide land development and to regulate the use of private and public land for public interest. The other important objective is to prevent sprawl of city and chaotic growth. The realization of the detailed local plans is a process which it express the change in an urban area from irregular plots of rural land to urban plots having infrastructure according to the detailed local plans. The municipalities are responsible for the realization of the detailed local plans in Turkey. There is not any sufficient research related to realization of the detailed local plans in urban spaces throughout the Turkey. The purpose of this study is to investigate whether there is a relationship between total subdivided area as a main indicator in realization of the local physical plans and population, population growth rate, socio-economic index, the number of technical personnel, some dummy variables. For this research, a sample survey method is used and 468 questionnaires are completed by planning office of the municipalities of urban areas in Turkey. In this model, the total area sub-divided in hectares is used as a dependent variable and population, population growth rate, socio-economic index, the number of personnel and some dummy variables. Multiple Regression Model is utilized for Turkey. The results of the paper can be used to identify the problems concerning the realization of the detailed local plans and to suggest solutions to these problems based on existing legislation in Turkey in international context.

1. INTRODUCTION

The implementation of the detailed local plans is not only to aim that the decisions of plan reflect to the space, but also, is to fulfill basic needs in setlements, to consitute the achievement of good urban design, to produce sufficient urban plots, to constitute healty infrastructure and to help in better management of urban growth. There have been several problems relevant to insufficiency in basic service areas like roads, parks, children play ground, car parks, in urban plot market and infrastructure both in the built–up areas and in promoting urban areas in Turkey. Many studies have focused on these insufficies in different time (Keleº, 1990; Koca 1997; Geray 1999; Habitat Report, 1996). Furthermore, neccessities in urban land have been put forward clearly in Aðaçlý and Tezesen's study (1993) and Habitat Report (1996) According to Aðaçlý and Tezesen (1993), Turkey have to produce 320.000 units in a year depending on the development of population, 70.000 house units for renewal and 5000 units for disaster. Also According to Habitat Report, Turkey has to produce urban plots for housing, 30.000 hectare in 2005 and also the same amount areas are needed for other activities apart from housing.

All of findings put forward the importance of the implementation of the detailed local plans for Turkish settlements. The most important indicator for the implementation of the local physical plans is the total area sub-divided in the settlements, because output in implementation procedure is total area subdivided according to the local physical plans. There has not been any information or study that shows the condition of the settlements on sub-division plans. In addition to this, any quantitative study has been made about this subject in Turkish settlements due to lack of data. Generally, literature related to the implementation of the detailed local plans is to be focused the tools of plan implementation and the its effective use in practise. (Yýldýz,1977; Koyuncu,1990; Unal,1996; Yomralýoðlu-Tüdeº, 1996; Isleyici,1997; Köktürk E-E,1998; Akdeniz, 2001) The current research aims to explain the causes behind the variations on total area sub-divided in Turkish urban settlements using multivariate analysis. An understanding of variables responsible for this would help in better managament of urban growth and in producing policies for improving urban areas in Turkey.

The implementation of the detailed local plans express a procedure in current study. This procedure so broad that it contains from the approval of the local physical plans to the building permission and control. In current study is examined the more narrow of the procedure. The procedure of the implementation of the local physical plans explains from the approval of the local physical plans to the production of the urban plots in this study.

The organisation of study is as follows. Section 1 introduces the context of research and determines the aim of study. Section 2 describes Turkish urban planning system and the implementation procedure in this system. Section 3 gives methodology and data in study. This section puts forward the sample structure of study. While section 4 gives the definition of variables, its other part explains model and the empirical estimation and discussions related to the model. Final section is devoted to conclusion. Also, this section looks at the implications of the research for the understanding of the variations total subdivided area in urban settlements in Turkey.

II. The Turkish Planning System

Development Law (Act no. 3194) has been a main source in formation of the built environment and spatial planning in Turkey since 1985. This law includes two important alterations according to previous ones except for the power to municipalities. First one was broght the rules for both urban and rural areas. In former ones there had been a gap in rural areas planning. Although some laws like Village Law and Sanitation Law tried to overcome this gap, they were not sufficient to dispel this gap. Second one was the rules related to hierarchical structure in urban planning. Former ones were only interested in the zoning and local physical plans. Socio-economic and superior physical plans were not taken into consideration in planning system.

According to Development Law (Act. No. 3194) plans are an important tool in reaching aims and goals of planning in this process. Plans are divided into two groups in this law. First one is the socio-economic plan and the second one is physical plans. Socio-economic plans express plans at national or regional level. National plan is prepared for five-year periods. Regional plans are prepared in compliance with the

decisions of national plan by state planning authority. Generally, the aim of socio-economic plans is to set general principles and concrete development aims and goals in its own level.

Physical plans might be also considered to divide into two groups that are superior and local physical plans. The superior physical plans are defined as plans at a scale of 1/200.000, 1/100.000, 1/50.000 and 1/25.000. Local physical plans are separated into land-use plans (zoning plans) and detailed plans. While land use plans are prepared at a scales of 1/5000 or 1/2000, detailed local plans are made at a scale of 1/1000.(Unal) The basic difference between land use plans and detailed local plans is in the content. The land use plans presents more general approach than detailed local plans. The detailed local plans are basic plans to start the implementation procedure.

Although Development Law (Act no 3194) brought the important rules about the implementation of detailed local plans, these rules didn't contain the new implemantation tools. Although the implementation tools in Development Law (Act no:3194) was the same with former one, the new law only brought changes related to the application of these tools. The understanding of the implementation procedure in Turkish planning system might be possible with looking at the development of the implementation tools in time.

Subdivision Plans

The municipalities have to implement the sub-division plans according to implementation programs section by section for the whole of the detailed local plans. Unless the subdivision plan is prepared with respect to the detailed local plan, the building permission for a parcel is not given. Sub-division plan provides the transformation from cadastral parcel to building plot (urban plot). According to Development Law (Act no:3194) subdivision plan is constituted by using three methods: Voluntary, Land Readjustment and Expropriation methods.

Voluntary Method

In voluntry method, a cadastral parcel fits the cadastral parsel into site block by using subdivision, consolidation and boundry exchanging. The existing cadastral parsel re-

demarcates according to local physical plans with voluntry method. This method is applied when a landowner wishes to obtain a building permission. If an existing cadastral parcel is enough large, it can be subdivided with respect to local physical plan. The land which covers public use area like roads, park, car parks, etc. is contributed to public use in this subdivision process. The contribution percentage of a cadastral parcel can be changed according to the decisions of local physical plans. For example, all of a cadastral parcel can cover with public use area with decisions of local physical plan. In that case, voluntry method cannot be applied. Some points of voluntry method are criticized. These are summarized (Yomralýoðlu-Tüdes,1996, Akdeniz,2001):

• The contribution percentage of each cadastral parcel is different from another. This provides unequality in all of plans and results to lost of revenue to landowners.

• In some circumstances a legal agrement is required between landowners.

• When this method is applied, main roads cannot be opened easily. So, expropriation method is mostly applied by municipalities.

• Although voluntry method is seen as easy method by municipalities, the problems occurs in implementation of local physical plan in long time period.

Expropriation Method

According to Act no 3194 and title 18 (the rule related to land readjustment) and the ordinance related to title 18, public areas are divided to two categories in project area. First category is public areas like roads, squares, parks, car parks, play grounds for children, police station and religious centers. These public areas are provided with the contribution percentage within project area. According to this title, landowners who have any parcel in land readjustment area have to give up 35 % the total area of their land for first category purposes. If the contribution percentage within the project is greater a %35, difference should be expropriated by the government in order to reduce the project of the contribution percentage. According to Act no 3194, title 18, %35 is the maximum contribution limit for land readjustment projects. Second category is public areas like school, hospital, public service area, kindergarten. These areas have to be expropriated by government. But this sort of expropriation is different from the others. The landowners are shared in these public areas in project area. These public

areas are expropriated from the new landowners after reallocation not from the former landowners before reallocation. (Unal,1996)

Expropriation procedure is applied according to Expropriation Act that was enacted in 1983 in Turkey. Some changes are made in the content of this act in 2001. The content of compensation procedure with last changes is converted to the more complex structure. According to the new changes, after making a decision of public interest, this decision is informed to the land register office and it is brought the limitation in use of land. The comission of determination of land value and conciliation commission is constituted. Firstly, it is given priority to the purchase of land. If an agrement for purchasing the land between the landowner and the conciliation commission is supplied, the amount of expropriation of the land is blocked in a bank in 45 days periods. If not, landowner can litigate against to expropriation procedure or the mistake of land value determination. In trial an agrement also can be supplied, if not, land survey, assessment the value are determined by experts and then, payment and registration is realized. Landowners can object to the amount of expropriation.

The effect of the new changes in expropriation law to the implementation of local physical plans exactly has not been known yet. But it might be seen that new changes can prevent to the usage of compensation method as implementation method. Municipalities or the other public authorities mostly the determined value cannot be blocked in a bank due to the insufficiency of budget. Before changes in Expropriation Act, this obligation was absent.

Land Readjustment Method

According to Larrson (1997), the general aim of land readjustment method is, through cooperation between the landowners of an area of land, to adapt its subdivision and facilities to plans for new or more efficient use of an urban nature. According to Sorensen (1999,2000), "land readjustment is a process whereby ownership of scattered and irregular plots of agricultural land is pooled, roads and main infrastructure are built, and the land is then subdivided into urban plots. Each landowner must contribute a portion of their provious land holding to provide space

for roads, parks and other public space and for reserve land. The attractiveness of method for landowners is based on the fact that substantial increases in the value of land can be achieved by process, so that the value of the individual land holdings can be greatly increased, even though the remainning area is smaller. The attraction for planning authorities is that projects provide land for public facilities, and build needed urban infrastructure." According Seele (1982), land readjustment is a crucial land mangement tool in urban plannning when suitable reformation of private land is necessary for residential purposes. According to Viitanen (2000), the characteristics of urban land readjustment procedure is a change in existing land use and/or land use intensity with the purpose of producing or reorganising built -up areas. The urban land readjustment procedures can be divided into three catories; readjustment for plan implementation, joint land development and land pooling. According to Viitanen (2000), the procedure readjustment for plan implementation is based on a detailed local plan prior to the procedure and depending on whether or not the profit has been shared out between the landowners. This can be land exchange or urban land replotting. A feature of the joint land development procedure is that the detailed local plan is prepared in connection with the land readjustment process. In the land pooling procedure landowners organise and implement the readjustment procedure with the related detailed land use plans in one and the same process. According to Viitaanen (2000) the German procedure can be classified as urban land replotting, Swedish procedure as joint land development, French procedure as pooled land development. In taking into considaration the Viitanen's division, Turkish urban land readjustment procedure might be identified as urban land replotting like German procedure. The procedure is based on a detailed local plan prior to the procedure. This similarity is not a coincidence. Because the main laws in Turkish planning system were prepared by being inspired from Germany planning law (Erkun,1999).

III. 1. Methodology and Data

The hypothesis in the current paper is that the variations on total area sub-divided in hectares in Turkish urban settlements depend on the effect of the various variables. At national level, the factors that are more vital in determining of the variations on total area sub-divided in settlements, in general, might be grouped into the following categories: the population characterestics, the characteristics of the municipalities in

settlements, the socio-economic characteristics of settlements, the political structure and the effect of the regional differences.

To test the hypothesis, the available data were insufficient. So, this study necessitated a large-scale empirical analysis that attempted to assess the national position across the country. The study took the form of a questionaire survey of municipalities selected through a stratified random sampling in Turkey and focused on the implementation procedure of the detailed local plans. In case the sampling is taken 468 numbers by using the basic random samling method, the maximum (+/-) 4.5 standard error in % 95 confidence level is expected.

Before questionnaire form had been sent to these municipalities, a pilot survey was made 20 questionnaires to check the intelligibility of the questions. Some questions were corrected again and the question form reconstituted. A questionnaire forms were sent by post with back return envelops to the planning department of the municipalities. Questionnaires were posted in October 2000. The research questionnaire was collected to the latest days of December 2000. The sampling area of the questionnaire survey is given in Table 1. While the sampling area was determined, city size groups didn't not only take into consideration, but also the balanced distribution between regions. (Table 2)

Table1. The Sampling Area of the Questionnaire Survey.

City Size Groups in Turkey (Municipality Size Groups) (Population)	The Number of Municipalities in Turkey	The Number of Returned Questionnaire Forms	Percentage (%) to The muncipalities numbers of the Returned Questionaire Forms
300.000>	28	28	100
100.000-300.000	71	57	80
100.000-50.000	83	51	60
50.000-10.000	411	116	28
10.000<	2607	216	8.3
TOTAL	3200	468	

Table 2. The Sampling Area of the Questionnaire Survey According to Regions

REGIONS	The Total Number of Municipalities	The Number of Returned Questionnaire Forms	The Representing Percentage (%) in Total of Returned Questionaire Forms According to Regions
Marmara Region	428	94	21.5
The Aegean Region	555	69	12.4
Mediterranean Region	457	66	14.4
Black Sea Region	506	75	14.8
The Central Anatolian Region	756	107	14.1
The Eastern Anatolian Region	247	33	13.3
The South-Eastern Anatolian Region	251	24	9.5
TOTAL	3200	468	100.0

Table 2. The Sampling Area of the Questionnaire Survey According to Regions

The questionnaire questions separated into three groups. Questions corresponding to each sought to assess whether local planning authorities:

- determined the behavior of municipalities on implementation of the detailed local plan ;

- finding out the problems in implementation of the detailed local plan in settlements;

- considered a proposal for solutions to problems.

The completed questionaires were coded and analysed using the istatistical PC Software (Version 8.0) Factor analysis and multiple regression analysis is used to achieve the aim of research.

III.2. Measurement of Variables and Their Characteristics
Dependent Variables

The dependent variable in the current paper is the total area sub-divided in hectares in urban areas. Total area sub-divided in hectares represents the total urban plots area obtained after the implementation o the detailed local plan.

Independent Variables

The independent variables included in this analysis are grouped broadly grouped into six categories: the population characterestics, municipality characteristics in

settlements, the socio-economic characteristics of settlements, the political structure and the effect of the regional differences. Tablo 3 shows the descriptive statistics of all variables employed in regression analysis.

In the population category, the dummy variables to determine the effect of the different city size groups and urban growth are used as independent variables in the regression analysis. The city size groups in current study, are determined as five groups. The four of these groups are added to the regression analysis as dummy variables and a group is taken a reference group. The aim in adding of these dummy variables to the regression analysis is to determine whether the diferrence is between city size groups in total area sub-divided in hectares. It is likely that there is the difference between city-size groups in total area sub-divided, because the municipalities in city–size groups that having the higher population have more advantages than that of small ones.

The urban growth rate is another variable in population category. In the calculation of the urban growth, 1990 and 1997 population census is used. The calculation procedure for the urban growth rate assumes that past population growth has followed a linear pattern in which population is explicitly a function of time. In order to take into consideration the differing time periods, each intercental period was reduced to an average annual change figure. This is expressed as:

$$r_i = (P_n - P_0) / P_0 : N$$

$r_i =$ annual population growth rate for city i;

$P_n =$ population of city i in most recent census;

$P_0 =$ population of city i in the preceding cencus;

$N =$ number of years in an intercental period.

It is expected that a higher growth rate will require the more effort on the implementation of detailed local plans in settlements. The municipalities in settlements that having the higher growth rate, have to implement the own detailed local plans rapidly, because in these settlements, the demand to the urban plots and healthy infrastructure and environment will probably be more than those of the other settlements. So, it is likely the urban growth rate affects the total area sub-divided in hectares.

The number of the technical personnnel is an important factor in fulfilling the duties related to the implementation of the detailed local plans of municipalities. This variable constitutes from total number of technical personnel working in municipality as like urban planner, surveying engineer and other technical staffs. In a municipality where the number of the technical personnel is high, it is expected to be at high level of the implementation of the detailed local plans. So, it is likely that this variable affects the total area sub-divided in hectares.

On the socio-economic characteristics of settlements side, the socio-economic index is used to represent the differences between settlements in regression analysis. So, the Chamber of Surveying Engineers of Turkey is published the list of unit price for every year. This list of unit price is included the socio-economic index of cities, counties and towns. In regression analysis, is used this index in list of unit price in 2001. It is expected that in a settlement where the soscio-economic index is high, the people will prefer to live the areas that having a high standard. This will cause to the increase in the production of urban plot. Additionally, in these areas, because the voluntary and land readjustment methods can be easily applied, the total area sub-divided will be high.

On politic structure side, the political party being represented by mayor in settlements, are added to regression analysis as a dummy variable to determine whether the political party is effective in the total area sub-divided in hectares. The data related to mayors and its political parties, is taken from web-site of the Ministry of Internal Affairs. In this variable, while mayors that are selected from any X party represent "1", mayors that are selected the other whole parties represent "0". X party only is taken to test whether the differences between policies of political parties in implementation procedure.

The following politics by the mayor might change according to their party policies. It is likely that these policies affect directly the implementation of the detailed local plans. For example, a mayor might give priority to some areas to produce the urban plots due to majority of voters. In some cases, a mayor might decide to not to apply

land readjustment projects not to lose vote. It is expected that there are the difference between policies of political parties on total area sub-divided.

In the category related to the effect of the regional differences, the dummy variables are used in the regression analysis. As dummy variables, seven groups are determined by taking into consideration the number of region in Turkey. The six of these are added to the regression analysis and a group is taken a reference dummy variable. The aim in adding of these dummy variables to the regression analysis is to determine whether the effect of the regional differences in the total area sub-divided in hectares. It is expected that the regional differences affect this, because there are soscio-economic and physical differences between urban areas in regions in Turkey.

III.3. Model

The general model are used in the statistical analysis describes the total area sub-divided in hectares as a function of the as population characterestics, the characteristic of the municipalities in settlements, the socio-economic characteristics of settlements, the political structure and the effect of the regional differences, as presented in equation;

$$I = f\,(\,P,\,M,\,S,\,L,\,R\,) + \varepsilon$$

The above function is estimated using the following functional form:

$$I = \alpha_1 + \sum \beta_i X_i + \sum \lambda_i D_i + \varepsilon$$

Where I represents the the total area sub-divided in hectares; Xi presents the quantitative independent variables; D_i states the dummy variables; α (the intercept) represents reference group that is not comprised by D_i in the model. When the quantitative independent variables are "0", α gives the the value of the avarage dependent variable. λ_i gives the difference of each dummy variables from the reference value. β_i (the slope) represents the effect on the dependent variable in case the quantitative independent variables change one unit.

Table 4 represent the correlation coefficients for the variables employed in the regression analysis. It shows that there are the 10 statistically significant correlations between the total area sub-divided and the 17 independent variables. While ten of them have a positive correlation with the dependent variable, only one has a negative correlation with the dependent variable. D1, D2, D4, TPERSONN, SOCIOECO, R4, D1MANA, D2MANA, D1SEANA have a positive sign with the dependent variable in the correlation matrix. The settlements that are in D1, D2 and D4 city size groups, have a higher total area sub-divided. This is possibly, because the municipalities in these city size groups have the more important advantages than the other city size groups. Also, the TPERSONN, SOCIOECO variables have positive sign with dependent variable in the correlation matrix. While the number of technical personnel increase, the municipality performance on the total area subdivided increase. The higher socio-economic index is, the more on the total area sub-divided is. D1MANA, D2MANA, D2SEANA, D1MED have a positive relationship with the dependent variable. The settlements in these city groups are the developed centers in Turkey and this is a normal result that there is a positive relationship between the city groups and the dependent variable. The settlements in Black Sea Region have a negative relationship with the dependent variable. This can be explained that settlements in Black Sea Region have the smaller planning area and the total area sub-divided than the others due to the geographical reasons.

All the 17 independent variables entered into analysis have been considered as determining municipality performance on the implementation of the detailed local plans.

At the end of first analysis, 13 variables are found to be statistically significant in explainning the variance in the municipality performance on total area sub-divided in hectares. They are D1, D2, D3, D4, TPERSONN, SOCIOECO, POLITICS, R1, R2, R4, D1MANA, D2 MANA and D1SEANA. All of them have positive effect. All the variables included in analysis combined could account for a total variance of 57.3 percent, while R is 0.757.

In this regression analysis, the reference group is defined as settlements that are in city size group under 10.000 and in the Marmara Region; have the mayors that are the

outside of selected the "X" party and the indequate budget on implementation procedure. Besides, the interaction of some dummy variables each other as dummy variable are added to regression analysis. For example, to be in both the Middle Anatolian Region and city size groups over 300.000 might affect the independent variable.

According to the results of first analysis, it is found that the difference from the reference group of city size groups is statistically significant. This means that there is difference between city-size groups in municipality performances on total area sub-divided in hectares. The total area sub-divided in city size groups over 300.000, 300.000-100.000,100.000-50.000, 50.000 -10.000 is better than that of in city size group under 10.000. From the result, it is clear that the increase in population causes to the raise in the total area sub-divided in hectares. It is a expected result, because the municipalities in city–size groups that having the higher population have more advantages than that of small ones on total area sub-divided in hectares.

The number of the technical personnel variable is positively and statistically significant. This is indicative of the fact that in municipalities where the number of the technical personnel is high, the total area sub-divided in hectares is high. The other significant variable is the socio-economic index. From the result, it is clear that the municipalities in settlements where have high socio-economic index have higher performances on total area sub-divided in hectares. The people in settlements where have high socio-economic level want to live in the better urban spaces and to respond these expectations of the people, the municipalities have to increase the own performances on total area subdivided.

The other variable is related to politics. This variable is positively and statistically significant, which denotes that mayors selected from X party create the difference on total area sub-divided than those of the others. As stated before, every mayor apply own political party policies. So, the result is indicative of the fact that the political party policy affect the total area sub-divided.

At the end of regression analysis, it is found that there is statistically difference on total area sub-divided between 3 regions (Aegean, Mediterranean and the Middle

Anatolian Regions) and the reference group (Marmara Region). Especially, according to the Marmara Region, the municipalities in the Middle Anatolian and the Mediterranean Regions have important difference in positive side.

The common understanding about municipality performance on total area sub-divided is that the municipalities in Marmara Region have high level. However, the results of the regression analysis indicate that the total area sub-divided in settlements in Marmara region is lower than three others. A possible explanation is that municipalities in Marmara Region don't produce sufficient urban plots to meet the necessity and unapproved sub-divisions are much more because of higher urban growth rate in settlements in Marmara Region.

The other important result in regression analysis is that the settlements in D1MANA, D2MANA and D1SEANA have the more important effect than the others. A common perception is that the biggest settlements in Middle Anatolia Region like Ankara, Konya, Sivas, Kayseri, Eskisehir are more successful than those of the other regions on implementation of the detailed local plans. The results of regression analysis confirm this perception from viewpoints of the total area subdivided. Additionally, the settlements that are defined as growth centers in South-East Anatolia Regions like Gaziantep, Urfa have performance on the total area sub-divided. In this result, GAP project might be effective.

IV. Conclusions

The current study has two basic aims. First one is being able to compare the total area sub-divided among settlements in Turkey. Second one is to explain the causes behind the variations on the total area subdivided in national context. Knowing the causes of the variations in the total area sub-divided in Turkish urban areas is so important that these affect urban area spaces directly. As the total area sub-divided in a settlement states the total production of urban plots according to the detailed local plans, at the same time, it express the formation of healty and planned environment in urban spaces.

The study shows that there is the difference on the total area sub-divided among city size groups. The total area sub-divided in city size groups, over 300.000, 300.000-100.000,100.000-50.000, 50.000 -10.000, is the higher than that of in city size group under 10.000. In Turkey, 81.9 % of the total municipality number accumulates in city size group under 10.000. This means that the total area sub-divided in the majority of settlements is fairly low. It is a fact that the majority of settlements have important problem on the implementation the detailed local plans. If the present pattern is allowed to continue without any intervention, urban spaces will develop haphazard and unhealty. Therefore, it is needed to take precautions to increase the total area subdivided in urban areas, especially, for small size city groups (50.000-10.000 and less 10.000). In legal framework, some changes should be brought, for example, the implementation methods should be revised or the new methods should be improved by taking into consideration by settlements in small groups.

The study also shows that the number of technical personnel and socio-economic level the other important variables in determining of the variations on total area sub-divided. Certainly, the increase in the number of technical personnel in municipalities provides easiness in the application of implementation methods. So, the obligation on the number of technical personnel to the municipalities should be brought.

At the end of analysis, it is found that there is the difference among the behaviour of political parties in the implementation procedure. The mayor has the important impact above the duties in the Municipality Act (Act no: 1580), especially, in small settlements. If at the end of elections, the mayor and majority of the municipality council are from the same political party, the effect of mayor on decision might be effective. On the contrary, the effect of mayor on decisions might weaken. While the mayor gives priority to some areas to produce the urban plots due to majority of voters or to the land readjustment projects in the implementation programs, in some cases, the mayor decides to not to apply land readjustment projects not to lose vote and supports voluntary methods more due to the insufficiency in budget. All movements affect negatively or positively the total area sub-divided in hectares in settlements.

REFERENCES

AKDENÝZ,H., 2001, Imar Planlarinin Uygulanmasinda Arazi ve Arsa Düzenlemesi (Land Readjustment in Implementation of Local Physical Plans), Ankara, Teknik Yayinevi.

ARCHER, R.W., 1982, Land Pooling by Local Government for Planned Urban Development in Perth, In W. Doebele (ed.): Land Readjustment, D.C. Health and Company, Lexington, Mass.,

Dünden Bugüne Iller Bankasi (Iller Bankasý Up to Now),1996, Ankara, Iller Bankasi Yayýný.

EDSIO, F., VARLEY, 1998, A., Illegal Cities,London-Newyork, Zed BooksLtd

ERKUN, S., 1999, Türk Imar Hukukunun Ana Cizgileri (The outline of Turkish Urban Law), Yapi-Endüstri Merkezi Yayýnlari, Istanbul.

GERAY,C:, 1999, 2000'li Yýllarýn Esiginde Toplumsal Konut, Arsa ve Kentsel Geliºme Yöneltilerimize Toplu Bakis (A Look to House, Urban Plot and Development   Tendencies in Turkey), Amme Idaresi Dergisi, V.32/ 4, pp. 85-116, (December).

ISLEYICI, C., 1997, Kentsel Arsa ve Arazi Yönetimi ve Gelistirilmesi: Bölgeleme ve Parselasyon, (Urban Plot and Land Management and Development : Zonning and Land Readjustment), TODAI Yerel Yönetimler Araºtirma Merkezi, Ankara.

KELES, R.,1990, Kentlesme Politikasi (Urbanization Policy), Ankara, Imge Kitabevi.

KOCA, G., 1997, Turkiye'de Imar Planlamasinda Uygulama Sorunlari ve Cozum Yollari (Practice Problems and Solutions in Local Physical Plans in Turkey), Istanbul, Ph. Thesis (Unpublished).

KOYUNCU, D., 1990, 18. Madde Uygulamasi, Uygulama Öncesi, Uygulama Evresi, Uygulama Sonrasinda Teknik Yönetimsel ve Hukuki Sorunlar (The Land Readjustment Method and Technical, Administrative and Legal Problems in Procedure), Teknik Arastirma ve Uygulama Genel Müdürlügü, 18. Madde Uygulamalari Semineri, Ankara.

LARSSON, G., 1997, Land Readjustment: A Modern Approach to Urbanization, England, Avebury Ltd.

Law and Practice of Urban Development in the Federal Republic of Germany, Federal Ministry for Regional Planning Building and Urban Development, 1993, Bonn, Federal Ministry for Regional Planning, Building and Urban Development.

SEE, W., 1982, Land Readjustment in the Federal Republic of Germany, In W.Doeble (ed.) Land Readjustment, Lexingtons, Mass., D.C Health and Co.

SORENSEN, A., 1999, Land Readjustment, Urban Planning and Urban Sprawl in Tokyo Metropolitan Area, Urban Studies, Vol:36, pp.2333-2360, London.

SORENSON, A., 2000, Land Readjustment and Metropolitan Growth: An Examination of Suburban Land Development and Urban Sprawl in the Tokyo Metropolitan Area, Progress in Planning, Vol.53, pp.219-330, London, Elsevier Science Ltd.

TEZESEN, C., AGACLI, O., 1993, Türkiye'de Kentsel Arsa Uretim Politikalarý ve Uygulamalar (The Politics in Producing of Urban Plot and Practices,Ankara, Bizim Büro Yayýnevi.

Turkiye Ulusal Komitesi Danýsma Kurulu, Turkiye Ulusal Rapor ve Eylem Plani (National Report and plan of Action for Turkey, Report for United Nations Human Settlements Conference, 1996, Habitat II, Istanbul,

YILDIZ, N., 1977 Arsa ve Arazi Duzenlemesi, (Land Readjustment), Istanbul, YTU Yayini.

YOMRALIOGLU, T., TUDES,T., 1996, Land Readjustment Implementation in Turkey, XXIVth International Housing Congress, p.150-161,Ankara.

UNAL, Y., 1996, Imar Planlarinin Uygulanmasi,(The Implementation of Local Physical Plans), Yasa ve Hukuk Degisi, Vol.175/6, pp.1004-1014, Istanbul.

VIITAANEN,K., 2000, Finsk Reglering Av Byggnadsmark I Ett Internationellt Perspectiv, Stockholm, KTH.

3194 Law, Accepted 3.5.1985-Published 9.5.1985, Ankara.

2290 Law, Accepted 10.6.1933- Published 21.6.1933,Ankara.

6785 Law, Accepted 9.7.1956- Published16.7.1956, Ankara.

Table 3. Independent variable construction and descriptive statistics

Variables	Description	Mean	Standard Deviation
URGROWTH	*The urban growth rate*	51.784	314.343
D 300.000>	*Equals 1 if city size groups over 300.000, otherwise 0*	0.059	0.237
D300-100.000	*Equals 1 if city size groups 300.000-100.000, otherwise 0*	0.122	0.327
D100-50.000	*Equals 1 if city size groups 100.000-50.000, otherwise 0*	0.109	0.312
D50-10.000	*Equals 1 if city size groups 50.000-10.000*	0.261	0.440
TPERSONN	*The number of technical personnel*	3.656	3.261
SOCIOECO	*The socio-economic index*	0.763	0.229
POLITICS	*Equals 1 if a mayor in a settlement, otherwise 0*	0.135	0.342
R1	*Equals 1 if a settlement in the Eagean Region, otherwise 0*	0.147	0.355
R2	*Equals 1 if a settlement in the Mediterranean Region, otherwise 0*	0.141	0.348
R3	*Equals 1 if a settlement in the Black Sea Region, otherwise 0*	0.156	0.363
R4	*Equals 1 if a settlement in the Middle Anatolian Region, otherwise 0*	0.229	0.420
R5	*Equals 1 if a settlement in East Anatolian Region, otherwise 0*	0.070	0.256
R6	*Equals 1 if a settlement in Southeast Anatolian Region, otherwise 0*	0.051	0.221
D1MANA	*Equals 1 if a settlement in the Middle Anatolian Region and city size groups over 300.000>, otherwise 0*	0.092	0.004
D2MANA	*Equals 1 if a settlement in the Middle Anatolian Region and city size groups 300.000-100.000, otherwise 0*	0.158	0.007
D1SEANA	*Equals 1 if a settlement in the Southeast Anatolian Region and city size groups 300.000-100.000, otherwise 0*	0.004	0.06

Tablo 5. The Results of Regression Analysis

Variables	Determinants of the Causes of Variations on Total Area Sub-divided
Intercept	***-1.1999 (-6.665)
URBANGROWTH	-0.00001 (-0.112)
D1 (300.000>)	***1.262 (6.381)
D2 (300.000-100.000)	***0.754 (5.292)
D3 (100.000-50.000)	***0.377 (3.144)
D4 (50.000-10.000)	**0.18 9 (2.337)
TPERSONN	***0.048 (4.337)
SOCIOECO	***0.595 (3.184)
POLITICS	**0.231 (2.484)
R1	*0.204 (1.871)
R2	***0.308 (2.688)
R3	0.178 (1.563)
R4	***0.463 (4.062)
R5	0.164 (1.053)
R6	0.219 (1.226)
D1MANA	***2.226 (5.9282)
D2MANA	***0.679 (2.889)
D1SEANA	***2.823 (5.446)
R	0.757
R2	0.573
Standard Errror	0.666
F	35.456***

Table 4. Correlation Matrix and the Total Area Sub-divided Determinants (N=468)

VARIABLE	I	URGROWTH	D 300.000>	D300-100.000	D 100-50.000	D 50-10.000	TPERSONN	SOCIOECO	POLITICS	R1	R2	R3	R4	R5	R6	D1*MIDANA	D2*MIDANA	D1*SEANA
I	1.00																	
URGROWTH	-0.001	1.00																
D 300.000>	0.499**	-0.018	1.00															
D 300-100.000	0.330**	0.014	-0.094*	1.00														
D 100-50.000	0.041	-0.010	-0.088	-.130**	1.00													
D 50-10.000	-0.111*	0.102*	-0.150**	-0.221**	-0.208**	1.00												
TPERSONN	0.476**	0.014	0.505**	0.435**	0.101**	-0.132**	1.00											
SOCIOECO	0.384**	0.029	0.309**	0.229**	0.079	-0.027	0.429**	1.00										
POLITICS	0.056	0.049	0.006	-0.089	-0.078	0.137**	-0.061	0.072	1.00									
R1	-0.035	-0.042	-0.029	-0.044	-0.029	-0.027	-0.075	0.207**	0.101*	1.00								
R2'	-0..011	0.037	-0.050	0.037	-0.023	0.039	-0.038	-0.053	-0.034	-0.168**	1.00							
R3	-0.130**	0.090	-0.108*	-0.070	-0.037	0.080	-0.093*	-0.131**	-0.032	-0.179**	-0.174**	1.00						
R4	0.112*	-0.073	-0.030	-..016	-0.076	-0.149**	-0.054	0.170**	-0.081	-0.226**	-0.221**	-0.234**	1.00					
R5	-0.084	-0.015	-0.034	-0.052	0.145**	0.027	-0.058	-0.270**	-0.011	-0.115*	-0.112*	-0.118*	-0.150**	1.00				
R6	0.060	-0.006	0.023	0.091*	0.136**	-0.006	-0.029	-0.153**	0.022	-0.097*	-0.094*	-0.100*	-0.127**	-0.064	1.00			
D1MIDANA	0.381**	-0.015	0.368**	-0.035	-0.032	-0.055	0.220**	0.116*	0.031	-0.039	-0.038	-0.040	0.171**	-0.026	-0.022	1.00		
D2 MIDANA	0.282**	-0.012	-0.041	0.436**	-0.057	-0..096*	0.226**	0.138**	-0.064	-0.067	-0.066	-0.070	0.298**	-0.045	-0.038	-0.015	1.00	
D1SEANA	0.277**	-0.008	0.260**	-0.024	-0.023	-0.039	0.082	0.054	0.070	-0.027	-0.027	-0.028	-0.036	-0.018	0.282**	-0.006	-0.011	1.00

Notes: ** Correlation is significant at the 0.01 level; * Correlation is significant at the 0.05 level.