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Possibilities and Limitations for the Measurement of the Quality of Life in Urban Areas with Respect to Regional Variations

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**POSSIBILITIES AND LIMITATIONS FOR THE MEASUREMENT
OF THE QUALITY OF LIFE IN URBAN AREAS
WITH RESPECT TO REGIONAL VARIATIONS**

ABSTRACT

Recently, quality of life has become a commonly used concept and showed growing significance in economic and political terms. Additionally, quality of life issues have been recognized within the migration processes. In one view, quality of life relates to the degree to which the necessary conditions for satisfaction in a given society or region.

It has been argued that quality as a measure variable would refer both the subject and the object of inquiry. In this sense, quality of life has two aspects as psychological and environmental ones. Nevertheless, this limitation constitutes a major problem since some researchers have totally neglected the perception of the people who live there, while another limitation is about the components, indices and indicators chosen in a certain analysis.

In this paper, it is aimed to test some measurement methods of the quality of life to show possibilities and limitations in a developing area beside developed ones. In this way, some comparisons could be available in measuring quality of life levels with respect to regional variations.

1. INTRODUCTION

Recently, some explanations of quality of life (QOL) in urban areas as well as regional viewpoints on quality of life appear in a number of articles (Morris, et.al. 1988; Coombes and Cook 1998; Rogerson 1995; Rogerson, et. al. 1996). Through these contributions, a number of characteristics arise.

First, the debate on the definition, measurement and utilisation in various disciplines arises certain requirements for interdisciplinary dissemination of research methods and assessments. Second, QOL opportunities have been viewed in relation to class and production-based positions and in terms of access to collective consumption traditionally, But actual observations suggest that significant differences in consumption and attitudes exist and in part these account for the divergent patterns of QOL.

Third, comparisons of metropolitan areas on objective data show that there is a little relationship between one set of measures and another and suggest that the perceptual aspects of the QOL should be taken into account (Wish, 1986).

Fourth, some models which are developed to explore the relationships between interregional migration and regional variation of QOL suggest that unlike the conventional conclusions, economic factors are not so important in motivating interregional migration, but the pursuance of better environmental quality is the dominant factor. Moreover, variations in educational expenditures on regional inequality in the QOL were found to be more significantly related to the social indicators than the economic ones (Hsien and Liu 1983; Liu, et.al. 1986). These findings are also affirmed in other works on cross-cultural differentiation in environmental performance and the regional dimension in a developing area (Atal k, et.al. 1993; Atal k and Baycan, 1996).

Fifth, QOL is related to progressive satisfaction of a hierarchy of requirements, lower order and higher with respect to a QOL theory derived from Maslow's developmental

perspective, while societal institutions that serve human needs include productive, maintenance, managerial/political, and adaptive institutions (Sirgy, 1986).

In this way, the main objective in this article will be to examine some measurement methods of the QOL with respect to regional variations to show possibilities and limitations in a developing area beside developed ones with respect to the perception of the people.

2. ON THE MEASUREMENT OF THE QUALITY OF LIFE

Since the 1930s QOL has become a commonly used term while researchers from different fields are interested in measuring. Especially, during the past decade, both the number and the scope of QOL studies have increased, while, definitions of QOL differ among researchers (Wish, 1986). QOL has been gained a remarkable popularity in both political and economic fields. Additionally, the last studies of QOL indicated an increasing significance within the migration process (Rogerson, 1997; Hsieh and Liu, 1983). Equally, it has been argued that perception and experiences of QOL were becoming important in people's spatial decision-making. As a result, issues related to QOL will have also become important in repositioning cities (Rogerson, et.al. 1996)

Efforts to measure the actual quality of community life, not just local 'economic but, also are rapidly increasing at the local, regional and state level. Additionally, QOL comparisons get special attention because of their all-inclusive nature which focuses on location-specific amenities. In other words, interregional and interurban comparisons of QOL are useful for location and public policy decisions (Berger , Blomquist and Waldner, 1987)

As Mukherjee states that quality as a measure variable would refer both the subject and the object of inquiry (Mukherjee, 1989). Thus, in assessing the QOL of a place, even it

still remains a disagreement about the measurement, it is worth to consider both objective and perceptual aspects.

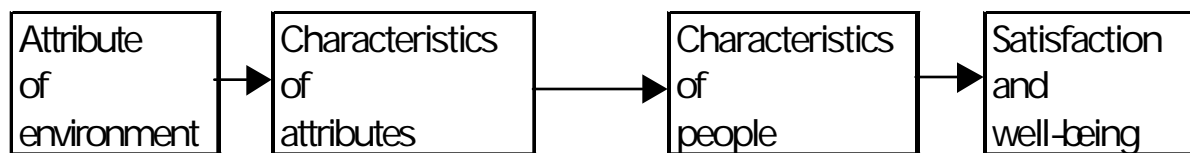
As a result, even though the QOL definitions can differ from the researchers view point and some limitations still stand, forming a consensus on the conceptual definition for QOL is not a major problem. As Wish indicates, “if one examines the most commonly used definitions closely, one finds they are highly similar. ... In other words, they all include a situation or condition that is perceived by an area’s residents and translated by them into varying degrees of a sense of well-being” (Wish, 1986). Whatever is the definition of QOL, the contribution to people’s life is important. From the planners view point, cities are the center of economic, politics, commerce and other activities , hence, it is important to understand the spectrum of conditions contributing to the quality of urban life (Sufian, 1993).

It can be said that despite all the disagreements about the definition of QOL there is a basic consensus about the meaning of QOL. A variety of life domains such as housing, health and education has to be taken into account in order to measure the QOL. According to recent studies, researchers in Europe and the US have argued strongly that both objective and subjective measures are necessary to provide an understanding of QOL. In assessing QOL of a place, what it is objectively is just as important as what it feels like for the individuals living there (Rogerson, 1997). Campbell et. al. indicate their arguments with the outcomes of their study named ‘The Quality of American Life, Perception, Evaluation and Satisfaction’ : “...specifically, the manner in which an objective environmental attribute is perceived and assessed by individuals is modified by their present situation, their attitudes and their past experiences. ... that objective measures of environmental attribute are inadequate in themselves as indicators of life quality” (Campbell, Converse and Rogers, 1976).

On QOL studies, the most common research method is applying a QOL questionnaire. Actually, a QOL questionnaire gathers people's subjective evaluation of QOL, omitting reference to people's objective situation (Greenley and Greenberg, 1997). On the other hand, previous studies point out that a person's satisfaction with their community has a big effect on their perceived QOL (Wagner, 1995). Therefore, Rogerson conceptualize QOL by determining a new term: Environmental quality of life. He defines environmental QOL as a combination of material and personal life arena.

Material life arena

Personel life arena



Environmental quality of life

Figure 1: A conceptual view of QOL (Rogerson, 1997)

The material life arena consists of a series of goods, services and other attributes related to the social, physical and economic environment in geographical space within which people live. The personal life arena has shown by characteristics of people. He highlights the value of the representation of QOL as both material and personal life arenas and he is able to locate previous types of research into this Figure. The studies such as Places Rated Almanac (Boyer and Savageau, 1981) on the material life arena without reference to the personal life arena or like Campbell, et.al.'s studies (1976) on the life satisfaction by assessing the outcome of people's evaluation of life as a whole did not assess the QOL as a whole. Rogerson points out an alternative approach by conceptualizing his research shown

above (Rogerson, 1997).

A certain number of indicators with their validity and measurability have been tested in the US, Britain and some of the O.E.C.D countries. In fact, researchers should create their own indicators by adapting the main indicators to their cultural context. In this sense, quality of life cannot be a standard stable measure. For instance, if one try to move the high quality of life circumstances of Montreal which was the first of the 98 largest cities of the world range according to the survey arranged by Sufian (1993) to Antarctica, the quality of life would not be the same. It is obvious that climatic, topographic and physical welfare features are totally different. So, the QOL indicators may differ according to the context of a region.

In this article, a questionnaire is applied. The indicators of QOL were chosen from recent studies and were adopted to the Istanbul context. This study concentrated on aspects of people's welfare from the viewpoint of the inhabitants.

3. MEASUREMENT OF THE QUALITY OF LIFE IN A DEVELOPING AREA

In many QOL studies, it still exists a major problem called limitations. It can be said that one of the reasons of neglect of subjective aspect of QOL, is this limitation problem. In other words, data are not available to differentiate and compare the sense of well-being across states, regions, cities or some other units.

Wish highlights another limitation on QOL studies. She says that as geographic units of analysis SMSA's have been used but this is highly questionable. "The QOL in most suburbs within SMSA's is vastly different from the QOL in their central cities" (Wish, 1986). She states that a suburb's QOL is probably similar to the QOL offered in another suburb, but not similar to the QOL exists in a downtown area .

In Turkey, geographic units such as SMSA, are not concerned. There are metropolitan areas and these areas have their own local metropolitan administration, but like in the USA a similar problem occurs in Turkey. First, this unit concerns both downtown and suburb areas. Second, with respect to the State Institute of Statistics it is not possible to obtain any data appropriate to a metropolitan area, because the Office always works on county scale. In other words, a metropolitan area's boundaries do not fit to the county boundaries at all. Even within a city especially in the largest urban areas, there are sharp differences. So, actually county scale is not a suitable unit to measure what it occurs in metropolitan areas. In all around the world, the QOL studies' unit of analysis should reestablish and it will be a good try if a standard can be obtained.

There is no consensus on components' indices and indicators employed in QOL studies this causes an other limitation. As Wish reported that Liu suggested a consensus about components by saying "... commonly agreed upon" but this agreement did never happen (Wish, 1986). For instance, Liu used five components in his QOL research, while Boyer and Savageau focused on nine, Rogerson indicated fifty five indicators, Sufian ten.

In choosing the variables another problem rises up called multicollinearity. Additionally, it exists a failure of the QOL indicators to differentiate how the QOL varies according to income, education and class.

A certain number of problems in collecting data could be seen especially in developing countries. The main difficulties in collecting the data have become the accessibility level to the data sources beside insufficiency of the obtained data and shortages in collecting some of them (Atal k, Baycan, 1996). As a result, some limitations about components, indices and indicators exist. Researchers must rethink about if they adequately measure the QOL by using such components, indicators or indices.

4. CASE STUDY: QOL IN THE ISTANBUL METROPOLITAN AREA

The sample of the study consists of 384 Istanbul inhabitants from 22 different districts which are the units in the Istanbul Metropolitan Municipality boundaries. In fact, the city of Istanbul consists of 32 districts but, in this study, 22 of them have been taken into account (Figure 2). These 22 districts were chosen to provide a stratified random sampling in Istanbul Metropolitan Area in terms of demographic characteristics which covers a number of specialities of the country through in-migration processes since 1950s.

The main objective of the questionnaire is to understand people's satisfaction in their daily life. In order to assess the satisfaction, respondents (inhabitants of Istanbul) were asked to report how satisfied they were with their districts as places to live by ranging 18 different attributes of QOL on a simple scale from 4 to 1, where 1 represented very satisfy and 4 totally dissatisfy.

In this case, theoretically, an individual's quality of life with his living place may be determined by the satisfaction of all aspects of his/her life. This may be expressed as;

$$Q = f(Q_1, Q_2, \dots, Q_n)$$

where, Q is the total measurement of an individual's quality of life (dependent variable),

Q_1, Q_2, Q_n are the satisfaction determined by all aspects upon individual's quality of life.

In this case, the independent variables to determine QOL as a satisfaction rate are shown below:

- S₁ Shopping facilities,
- E₁ Environmental pollution,
- E₂ Education provision,
- C₁ Cost of living,
- N Noise levels,
- C₂ Climate,

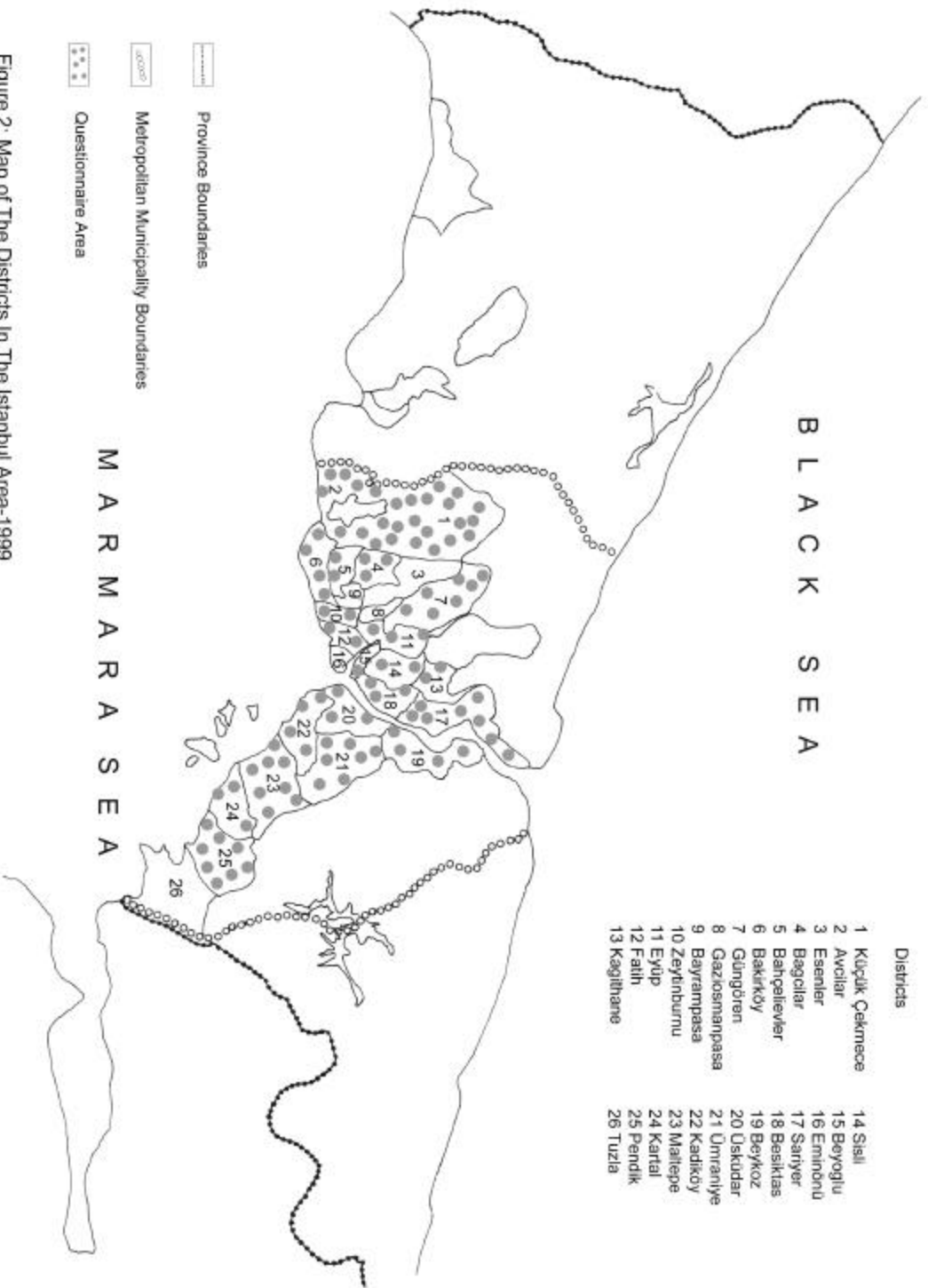


Figure 2: Map of The Districts In The Istanbul Area-1999

- J₆ Job opportunities,
- T₁ Travel to work,
- C₃ Crowding,
- R Relation with neighbours,
- H₁ Housing conditions,
- P Parks, green areas,
- H₂ Health,
- L Leisure opportunities,
- S₂ Sporting,
- C₃ Crime rate,
- A Accessibility to public transportation,
- T₂ Traffic congestion.

The main form of the model in this analysis is a multiple linear regression type. All the variables are derived from the opinion survey.

The results derived from the case study in a developing area, namely in the metropolitan area of Istanbul which is covered a number of characteristics of the country with respect to the ongoing in-migration processes, as a primate city, show that satisfaction level is fairly changed in district scale, by the figures of coefficient of variation within the interval of 0.2837-0.3750 (Table 1)(Figure 3). Concerning the variables entered and removed in the stepwise regression analysis indicate that climate, health, sporting, crowding and shopping facilities are major determinants of the satisfaction level for sample districts although the figures of the coefficient of determination are not so high and do not allow for predictions as a whole. However, a number of districts show higher coefficients of determination depending upon a number of different independent variables correspondingly:

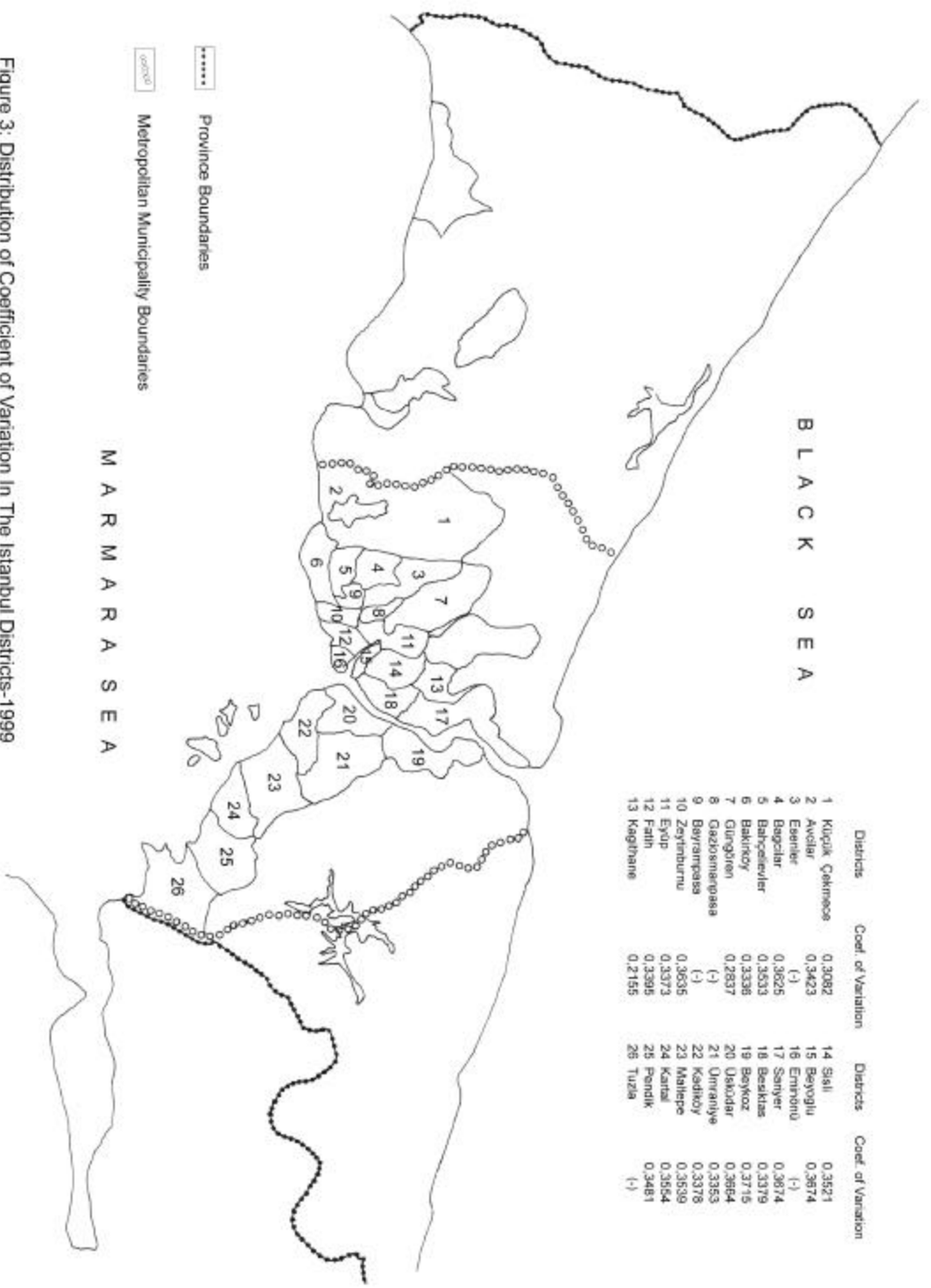


Figure 3: Distribution of Coefficient of Variation In The Istanbul Districts-1999

<u>Districts</u>	<u>Independent Variables To Determine QOL (satisfaction)</u>
Avcılar	Shopping facilities, Sporting, Accessibility to public transportation.
Beşiktaş	Shopping facilities, Accessibility to public transportation.
Beykoz	Cost of living, Housing conditions.
Eyüp	Health, Environmental pollution Cost of living.
Güngören	Education provision, Accessibility to public transportation.
Kağıthane	Health, Green areas, Relation with neighbours, Traffic congestion.
Sultanbeyli	Leisure opportunities, Green areas.

(see, Table 2)

5. CONCLUDING REMARKS

Since QOL has become a commonly used concept and showed growing significance in economic and political terms, it should be worthwhile to evaluate some developing areas in this sense.

Despite of some limitations for a developing area to measure QOL levels with respect to regional variations, it seems that there are also some possibilities for primate cities

covering in-migration processes from the whole country within considerable periods.

The case study in this article shows that the QOL in terms of satisfaction should refer both the subjective and objective aspects concerning necessary conditions for satisfaction in given regions. Further field studies and cross-cultural comparisons should be considerable in evaluating a number of determinants in the interactions on QOL in a certain region.

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Table 1: Distribution of Coefficient of Variation In The Istanbul Districts -1999
(dependent variable:satisfaction)

Districts	Mean	St. deviation	Coefficient of Variation
Avcılar	1,1818	0,4045	0,3423
B. evler	1,4348	0,5069	0,3533
Bağcılar	1,3500	0,4894	0,3625
Bakırköy	1,1667	0,3892	0,3336
Beşiktaş	1,5455	0,5222	0,3379
Beykoz	1,3000	0,4830	0,3715
Beyoğlu	1,3077	0,4804	0,3674
Eyüp	1,5385	0,5189	0,3373
Fatih	1,1875	0,4031	0,3395
Güngören	1,6875	0,4787	0,2837
K. Çekmece	1,7308	0,5335	0,3082
Kadıköy	1,5000	0,5067	0,3378
Kağıthane	1,8235	0,3930	0,2155
Kartal	1,2500	0,4443	0,3554
Maltepe	1,2353	0,4372	0,3539
Pendik	1,4737	0,5130	0,3481
Sarıyer	1,3077	0,4804	0,3674
Sultanbeyli	1,3333	0,5000	0,3750
Şile	1,4667	0,5164	0,3521
Ümraniye	1,5185	0,5092	0,3353
Üsküdar	1,5769	0,5778	0,3664
Zeytinburnu	1,4167	0,5149	0,3635
ISTANBUL	1,4453	0,4976	0,3443

Table:2 Model Summaries

ISTANBUL (including 22districts)				Model Summary ^f					
Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0,372a	0,139	0,136	0,4625	0,139	61,481	1	382	0,000
2	0,484b	0,235	0,231	0,4365	0,096	47,847	1	381	0,000
3	0,513c	0,263	0,257	0,4288	0,029	14,726	1	380	0,000
4	0,534d	0,285	0,278	0,4230	0,022	11,606	1	379	0,001
5	0,544e	0,296	0,287	0,4203	0,011	5,837	1	378	0,016

a.Predictors: (Constant), Climate

b.Predictors: (Constant), Climate, Health

c.Predictors: (Constant), Climate, Health, Sporting

d.Predictors: (Constant), Climate, Health, Sporting, Crowding

e.Predictors: (Constant), Climate, Health, Sporting, Crowding, Shopping facilities

f. Dependent Variable:Satisfaction

District: AVCILAR				Model Summary ^g						
Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,772a	0,596	0,551	0,2712	0,596	13,255	1	9	0,005	2,464
2	0,906b	0,821	0,776	0,1915	0,225	10,039	1	8	0,013	
3	0,952c	0,907	0,866	0,1478	0,086	6,433	1	7	0,039	
4	0,986d	0,972	0,954	8,67E-02	0,066	14,358	1	6	0,009	
5	0,994e	0,989	0,978	6,06E-02	0,016	7,267	1	5	0,043	
6	0,991f	0,983	0,971	6,89E-02	-0,006	2,760	1	7	0,158	

a.Predictors: (Constant), Shopping facilities

b.Predictors: (Constant), Shopping facilities, Sporting

c.Predictors: (Constant), Shopping facilities, Sporting, Accessibility to public transportation

d.Predictors: (Constant), Shopping facilities, Sporting, Accessibility to public transportation,Noise level

e.Predictors: (Constant), Shopping facilities, Sporting, Accessibility to public transportation,Noise level,

Climate

f.Predictors: (Constant), Shopping facilities, Accessibility to public transportation,Noise level, Climate

g. Dependent Variable:Satisfaction

District: BAHÇEL EVLER **Model Summaryb**

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,479a	0,229	0,192	0,4555	0,229	6,239	1	21	0,21	2,059

a.Predictors: (Constant), Environmental Pollution

b. Dependent Variable:Satisfaction

District: BA CILAR **Model Summaryb**

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,679a	0,461	0,431	0,3690	0,461	15,418	1	18	0,001	2,487

a.Predictors: (Constant), Climate

b. Dependent Variable:Satisfaction

District: BE KTA **Model Summaryf**

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,788a	0,622	0,579	0,3387	0,622	14,778	1	9	0,004	1,618
2	0,970b	0,941	0,926	0,1417	0,320	43,406	1	8	0,000	
3	0,989c	0,979	0,970	9,10E-02	0,038	12,398	1	7	0,010	
4	0,996d	0,991	0,985	6,35E-02	0,012	8,377	1	6	0,028	
5	0,998e	0,996	0,992	4,53E-02	0,005	6,782	1	5	0,048	

a.Predictors: (Constant), Shopping facilities

b.Predictors: (Constant), Shopping facilities,Accessibility to public transportation

c.Predictors: (Constant), Shopping facilities, Accessibility to public transportation,Noise level

d.Predictors: (Constant), Shopping facilities, Accessibility to public transportation,Noise level, Climate

e.Predictors: (Constant), Shopping facilities, Accessibility to public transportation,Noise level, Climate,

Housing conditions

f. Dependent Variable:Satisfaction

District: BEYKOZ**Model Summarye**

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,842a	0,708	0,672	0,2766	0,708	19,44	1	8	0,002	2,146
2	0,946b	0,895	0,865	0,1773	0,895	12,481	1	7	0,010	
3	0,985c	0,970	0,955	1,02E-01	0,970	15,12	1	6	0,008	
4	0,997d	0,994	0,990	4,85E-02	0,994	21,538	1	5	0,006	

a.Predictors: (Constant), Cost of living

b.Predictors: (Constant), Cost of living, Housing conditions

c.Predictors: (Constant), Cost of living, Housing conditions, Climate

d.Predictors: (Constant), Cost of living, Housing conditions, Climate, Sporting

e. Dependent Variable:Satisfaction

District: BEYO LU**Model Summaryb**

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,720a	0,519	0,475	0,3482	11,846	19,44	1	11	0,006	2,250

a.Predictors: (Constant), Environmental Pollution

b. Dependent Variable:Satisfaction

District: EYÜP**Model Summaryd**

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,919a	0,844	0,830	0,2141	0,844	59,499	1	11	0,000	1,000
2	0,972b	0,945	0,934	0,1332	0,101	18,398	1	10	0,002	
3	0,985c	0,969	0,959	0,1047	0,024	7,189	1	9	0,025	

a.Predictors: (Constant), Health

b.Predictors: (Constant), Health, Environmental Pollution

c.Predictors: (Constant), Health, Cost of living

d. Dependent Variable:Satisfaction

**District:
GÜNGÖREN**

Model Summaryc

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,799a	0,638	0,612	0,298	0,638	24,698	1	14	0,000	1,543
2	0,865b	0,748	0,709	0,2584	0,109	5,630	1	13	0,034	

a.Predictors: (Constant), Education provision

b.Predictors: (Constant), Education provision, Accessibility to public transportation

c. Dependent Variable:Satisfaction

**District: K.
ÇEKMECE**

Model Summaryc

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,624a	0,390	0,364	0,4254	0,390	15,322	1	24	0,001	1,919
2	0,697b	0,486	0,441	0,3989	0,096	4,297	1	23	0,050	

a.Predictors: (Constant), Crime rate

b.Predictors: (Constant), Crime rate, Crowding

c. Dependent Variable:Satisfaction

District: KADIKÖY

Model Summaryb

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,407a	0,166	0,142	0,4692	0,166	7,147	1	36	0,011	2,690

a.Predictors: (Constant), Climate

b. Dependent Variable:Satisfaction

District:
KA ITHANE

Model Summaryg

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,686a	0,47	0,435	0,2954	0,47	13,319	1	15	0,002	1,850
2	0,814b	0,663	0,614	0,224	0,192	7,979	1	14	0,014	
3	0,885c	0,783	0,732	0,2033	0,12	7,172	1	13	0,019	
4	0,921d	0,848	0,797	0,1771	0,065	5,124	1	12	0,043	
5	0,973e	0,946	0,922	0,1097	0,099	20,303	1	11	0,001	
6	0,973f	0,946	0,928	0,1056	-0,001	0,135	1	13	0,72	

a.Predictors: (Constant), Health

b.Predictors: (Constant), Health, Cost of living

c.Predictors: (Constant), Health, Cost of living, Parks-green areas

d.Predictors: (Constant), Health, Cost of living, Parks-green areas, Relation with neighbours

e.Predictors: (Constant), Health, Cost of living, Parks-green areas, Relation with neighbours, Traffic congestion

f.Predictors: (Constant), Health, Parks-green areas, Relation with neighbours, Traffic congestion

g. Dependent Variable:Satisfaction

District: MALTEPE

Model Summaryb

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,510a	0,260	0,211	0,3884	0,260	5,279	1	15	0,036	2,063

a.Predictors: (Constant), Health

b. Dependent Variable:Satisfaction

District: PEND K**Model Summaryc**

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,725a	0,525	0,497	0,3638	0,525	18,789	1	17	0,000	2,371
2	0,811b	0,658	0,615	0,3182	0,133	6,218	1	16	0,024	

a.Predictors: (Constant), Housing conditions

b.Predictors: (Constant), Housing conditions, Noise levels

c. Dependent Variable:Satisfaction

District: SARIYER**Model Summaryb**

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,653a	0,427	0,375	0,3799	0,427	8,191	1	11	0,015	2,886

a.Predictors: (Constant), Education provision

b. Dependent Variable:Satisfaction

District:**Model Summaryc****SULTANBEYL**

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,898a	0,806	0,779	0,2352	0,806	29,167	1	7	0,001	2,058
2	0,970b	0,942	0,922	0,1393	0,135	13,947	1	6	0,010	

a.Predictors: (Constant), Leisure opportunities

b.Predictors: (Constant), Leisure opportunities, Parks-green areas

c. Dependent Variable:Satisfaction

District:
ÜMRAN YE

Model Summaryc

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,617a	0,381	0,356	0,4087	0,381	15,364	1	25	0,001	2,549
2	0,705b	0,497	0,456	0,3757	0,117	5,579	1	24	0,027	

a.Predictors: (Constant), Health

b.Predictors: (Constant), Health, Relation with neighbours

c. Dependent Variable:Satisfaction

District: ÜSKÜDAR

Model Summaryb

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,537a	0,288	0,258	0,4976	0,288	9,706	1	24	0,005	2,700

a.Predictors: (Constant), Health

b. Dependent Variable:Satisfaction

District:
ZEYT NBURNU

Model Summaryb

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0,866a	0,751	0,726	0,2697	0,751	30,104	1	10	0,000	2,754

a.Predictors: (Constant), Crime rate

b. Dependent Variable:Satisfaction