The Differentiation of Parental Satisfaction with the Spatial Features of Public Primary Schools: The Case of Pendik, Istanbul

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Abstract
Purpose
The present study aims to examine the change of parents' satisfaction with the spatial features of public primary schools according to personal, residential, school, and neighbourhood characteristics and to measure to what extent the spatial features explain the overall satisfaction with primary schools.

Design/Methodology/Approach
Firstly, the study area was divided into 4 clusters by hierarchical clustering method. In proportion to the number of students in each cluster, an online survey was conducted with 807 parents in 19 public primary schools in Pendik between 5-27 May 2020. Personal and residential characteristics obtained from the survey results and school and neighbourhood characteristics obtained from secondary sources were cross-tabulated with the levels of satisfaction on 19 spatial characteristics of the schools. Later, these 19 spatial features were reduced to two basic dimensions with the principal component analysis, and the level of explanation of these dimensions on the overall school satisfaction was revealed by multiple regression analysis.

Findings
The level of satisfaction of parents with the spatial characteristics of primary schools differs significantly according to personal (15 out of 19), residential (5 out of 19), school (14 out of 19), and neighbourhood (10 out of 19) characteristics. In addition, the parents' satisfaction regarding the spatial adequacies of the primary school has a determinant effect on the overall satisfaction of the parents with the primary school. The most effective factors in the overall satisfaction of parents from primary school are "size of sports fields" and "size of activity spaces".

Research Limitations/Implications
Similar studies in different cases (both in rural and urban areas), different time periods, and for different education levels should be repeated to compare the results.

Social/Practical Implications
This research indicates that spatial characteristics should be taken into account in determining the priority improvements starting from the sports fields and activity spaces of schools.

Originality/Value
The present study evaluates the spatial adequacies of public primary schools and associates it with urbanization and urban planning. It is expected to contribute to the studies to increase the quality of spatial dimensions of primary schools, and consequently urban life quality.

Keywords: Primary schools, parental satisfaction, spatial adequacy, urban life quality, Istanbul

INTRODUCTION

The rapid population growth in megacities causes both insufficiencies in urban service provision and numerous social and economic problems, revealing the need to continuously measure and improve the quality of urban life. Therefore, the criteria and indicators used in determining the quality of life in today's megacities have gained prominence. In spatial terms, the level of meeting the standards of urban facilities determines the quality of life and satisfaction with life in the urban area (Massam, 2002). On the other hand, since the criteria of the quality of life can vary according to the society and the individual (Marans, 2007), in studies of measuring the urban life quality, subjective indicators are also taken into account in order to determine the satisfaction based on the perception of the individual along with the objective indicators (Atik et al., 2014; Bognar, 2005; Boylu & Paçacıoğlu, 2016; Campbell et al., 1976; Kerce, 1992; Marans & Rodgers, 1975; Salihoğlu & Türkoğlu, 2019).

Education is one of the basic needs of human life. Primary education as a public activity is not only a necessity for the development of the individual but also one of the most important elements for the healthy development and well-being of society. Therefore, the education indicator has a significant role in measuring the quality of urban life (Galster, 1987). Primary schools on the other hand, which are sensitive in terms of the age group they are addressing, are one of the top priority basic social facilities for urban planning.

The success and quality of education depend on many spatial and non-spatial factors such as curriculum, teacher, administration, educational infrastructure, building conditions, schoolyard size, and equipment. In many studies, it was observed that the success level of schools increased with the development of the spatial conditions of schools (Aydoğan, 2012; Karaküçük, 2008; Şensoy & Sağsöz, 2015; Vural & Sadık, 2003). Therefore, spatial factors such as school buildings and gardens, access to school, and security issues should be a priority in terms of spatial planning.

Since children in primary education need the custody and supervision of their parents, the parents' assessment of primary schools is of critical importance. In addition, parents are often cited as one of the stakeholders of education in the literature. Parents' ratings are influenced by spatial and non-spatial factors such as their relationship with teachers and the quality of their children's classroom life (Epstein, 1985). The aim of the present study is to examine the change of parents' satisfaction with regard to the spatial characteristics of public primary schools, which is one of the vital components of urban life quality indicators, according to personal, residential, school and neighbourhood characteristics, and to measure to what extent spatial characteristics explain the overall satisfaction with primary schools. Within this context, an online survey was conducted on 807 parents between the dates of 5-27 May 2020 in 19 public primary schools in the Pendik district of İstanbul, which is one of the biggest megacities in the world.

The first section following the introduction is devoted to the review of the literature regarding the spatial adequacy of primary schools and the school satisfaction. The second section explains the method used, the datasets analysed and the study area worked within the paper. The third section firstly presents descriptive statistical findings and then shares the main findings of the study in the three sub-headings: the change in satisfaction level based on personal and residential characteristics, the change in satisfaction level according to the neighbourhood and school characteristics, and the influence of spatial features on the overall school satisfaction. The conclusion section consists of a general evaluation of the study, practical results for urban planning, and recommendations for further studies.

LITERATURE REVIEW

There are two basic approaches in conceptual models for quality of life, namely objective and subjective. The objective approach is the determination of standards that are supposed to meet human needs and the level of meeting these needs. The subjective approach, on the other hand, is an individual's perception-based approach for his or her own quality of life. On the other hand, the individual's satisfaction is not only affected by subjective characteristics such as the individual's perception and evaluation in his / her own life, but also by the objective characteristics of the living environment. Therefore, objective and subjective properties are not independent of each other (Campbell et al., 1976).

Discussions about satisfaction with public schools, which is an important component of quality of life mostly focus on education (Alpakut, 2017; Çamlıca, 2016; Özbaş, 2014) and public administration (Friedman et al., 2006; Friedman et al., 2007; Thompson, 2003). In the preliminary studies conducted in the 1970s, no significant relationship was found between objective measurements and subjective citizen satisfaction (Brown & Coulter, 1983; Parks, 1984; Stipak, 1979). These early studies have been criticized by claiming that the measurements are incompatible with each other (Kelly, 2003), the model is misidentified, and the objective data are collected only for upper-scale development targets and this has negligible effects on individuals (Parks, 1984). On the other hand, it was claimed that citizens were not aware of the level of service they received (Stipak, 1979, 1980). In recent years, models based on the 'Expectations Disconfirmation Theory' (the difference between expectations and perceived performance) that explain how citizens' satisfaction decisions are formed have been commonly used (James, 2009; Morgeson, 2012; Van Ryzin, 2004, 2006).

Charbonneau et al. (2012) indicate that there is an increase in surveys related to parents' satisfaction with public schools. In the study conducted by Charbonneau et al. (2012) on performance measures and parental satisfaction in New York public schools, a positive relationship was found between the objective characteristics of public schools and

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parents' satisfaction. For this reason, it is recommended to use objective and subjective data together in evaluating school satisfaction. There are also studies that found that the level of school satisfaction does not show a similar pattern with the observable objective school characteristics (Gibbons & Silva, 2011). Other studies have also found that the relationship between expectations from objective data, perceived quality and behavioural outcome variables had an effect on satisfaction level (Berryman, 2015). Besides, satisfaction studies conducted on parents and teachers showed that the evaluations of parents and teachers were significantly similar. The reason for this may be that there is a mutual relationship between parents and teachers and they affect each other (Favero & Meier, 2013). Neal and Watling Neal (2012) tested the quality of public schools and individuals' satisfaction with their society. Accordingly, it was argued that the quality of public schools determines, directly or indirectly, the satisfaction people have with their society - including those who do not have children of school-going age- as public interest.

Again, studies on the definition of the relationship between school characteristics and parents' school preferences are common. Generally, in these studies, students' average test scores are evaluated for their academic performance as a school characteristic. In the literature, the relationship between the characteristics of the school and local housing prices are analysed using the "hedonic" method. As a matter of fact, Gibbons and Machin (2008) reported that a one-unit increase in the mean test score standard deviation results in an estimated 3-4% house price increase. In another study conducted by Rothstein (2006) it was revealed that the preferences of the parents are more related to the peer group composition. Hastings et al. (2005) found that the school choices of parents are related to the school's proximity to home and average test scores as well as the family's educational background and income level. According to the results of the research conducted by Jacob and Lefgren (2007) it was determined that teachers are effective in the school preferences, and parents prefer teachers who provide student satisfaction.

Relevant studies in Turkey discuss public universities (Cevher, 2015; Ekinci & Burgaz, 2007), private universities (Tayyar & Dilşeker, 2013), open education (Okumuş & Duygun, 2008), tourism education (Şahin, 2011), primary and secondary schools (Bakioğlu & Bahçeci, 2010; Bozyiğit, 2017; Karadağ, 2010; Nartgün & Kaya, 2016). However, in order to determine family satisfaction with primary education, a 'family satisfaction survey' is recommended to be carried out throughout Turkey (Özbaş, 2014). The increase in the number of private schools and the more selective behaviour of parents in choosing private schools increased competition in the private school sector. For this reason, there is increasing number of studies on parent satisfaction and the factors affecting this in terms of private schools. Alpakut (2017) analysed parents' satisfaction with the "Structural Threshold Model" in a private

primary school in Izmir and determined that the ICT and cafeteria facilities of the school are the most important factors. Özbaş (2014) tested whether the level of meeting the satisfaction of families with primary school administrators varies according to the variables of education status, profession, and income level, which are subjective characteristics of parents, in a study conducted on 264 parents in a primary school in Ankara. Factor groups were determined using the factor analysis and Kruskal Wallis H-Test was applied for comparisons. In the study, it was found that the satisfaction of families with primary school depends on the socio-economic characteristics of the family together with the effectiveness of the school management.

Ahmetoğlu and Acar (2017) examined how parents perceive their children's early childhood experiences in the education process. In this study, the measurement tool named "Parent Satisfaction with Educational Experiences" developed by Fantuzzo et al. (2006) was adapted to Istanbul, and factor analysis and validity-reliability analyses were performed in the study conducted with 442 parents in Istanbul. Karadağ (2010) made a multidimensional evaluation of parent perceptions regarding the quality of service of primary schools with a survey conducted on 470 parents in 6 schools in Istanbul. In this study, data were collected using the SERVQUAL Service Quality Scale. Many Whitney-U and Kruskal Wallis-H tests were preferred for the analysis of the quantitative data of the study, and descriptive analysis was preferred for the analysis of qualitative data. According to the results, a positive relationship was found between the perception of service quality and satisfaction.

Neighbourhood, which is considered as the basic unit in urban planning, is generally formed around a primary school. However, studies relating primary schools to quality of life and urban planning generally focused on accessibility to primary schools and the spatial distribution of primary schools. There is a need for studies linking objective and subjective evaluations of the spatial quality and adequacy of primary schools with urban planning and quality of life. The present study is an original study in terms of its multi-dimensional evaluation of the spatial adequacies of public primary schools and its association with urbanization and urban planning.

METHODOLOGY OF THE STUDY
Material and Methods
The present study aims to investigate the change of parental satisfaction with public primary schools according to personal, residential, school, and neighbourhood characteristics. Within this scope, we used both primary and secondary data for the statistical analysis (Table 1). As primary data, we conducted an online survey on 807 parents in 19 public primary schools in Pendik, Istanbul between 5-27 May 2020. As secondary data, we collected both spatial and numeric data of primary schools to represent school characteristics; and we used the "Socio-

Economic Development Index" of neighbourhoods produced within the scope of the "Mahallem İstanbul" Project (Mahallem, 2016) to represent neighbourhood characteristics.

Table 1. Factors influencing children's environment and stress in hospital

Data	Source	Type
Personal characteristics of respondents (parents)	Survey results	Primary data
The levels of satisfaction with the spatial features of the primary schools	Survey results	Primary data
General satisfaction level with primary schools	Survey results	Primary data
Socio-Economic Development Index of Neighbourhoods	Mahallem İstanbul Project Database, 2016[1]	Secondary data
The number of students and teachers in primary schools	Official web sites of primary schools, 2020 Ministry of Education, 2020	Secondary data
Spatial data of primary schools	Ministry of Education Construction and Real Estate Department,2019	Secondary data
Total population of neighbourhoods	TURKSTAT, 2019	Secondary data
Total surface area of neighbourhoods	(Pendik-Municipality, 2020)	Secondary data

In the survey, parents were asked to evaluate 19 spatial characteristics in the following six sub-headings related to the primary school their children attend:

- Area of the classrooms, school garden, sports and activity areas;
- Functional facilities such as education (laboratory, music room, painting room), activity (show hall, meeting areas), sports (indoor and outdoor sports facilities) and canteen / dining hall;
- Security of the school and its surroundings such as security measures, school doors and traffic safety;
- Accessibility to school such as transportation and parking facilities;
- Physical structure such as heating / lighting, equipment, hygiene and cleanliness
- Architectural features such as building aesthetics, disabled compatibility and landscape.

The personal and residential characteristics obtained from the survey results as well as school and neighbourhood characteristics obtained from secondary sources were cross-tabulated with 19 spatial characteristics of the schools by using non-parametric tests in SPSS package program. Later, these 19 spatial features were reduced to two basic dimensions with the principal component analysis, and the level of explanation of overall satisfaction with the school of these dimensions was revealed by multiple regression analysis. The steps of the statistical analysis, and the spatial features that are assessed by the respondents can be seen in Figure 1.

[1] "Mahallem Istanbul" Project was carried out by a team at Istanbul University under the coordination of Prof. Dr. Murat Şeker, with the financial support of the Istanbul Development Agency. Within the scope of the project, an index was created by using secondary data sources in order to reveal the socio-economic development level of the neighbourhoods in Istanbul.hospital (question 21) with an average of 4.5
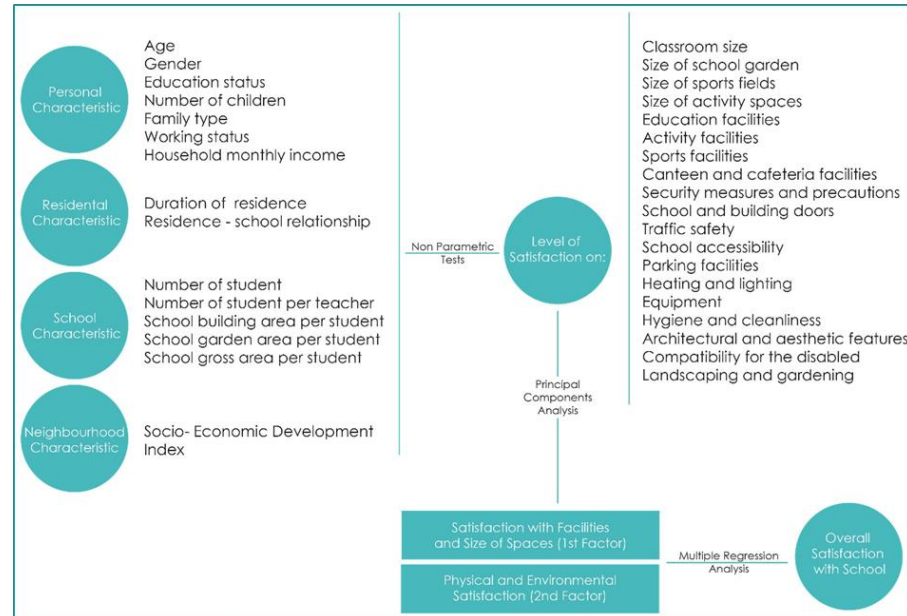
Figure 1. Research Design

Since the data structure does not meet the basic assumptions of parametric tests, we preferred nonparametric tests for cross-inquiries. For nominal-ordinal comparisons, we employed the Kruskal-Wallis test, which is the non-parametric equivalent of ANOVA. The Kruskal-Wallis tests the null hypothesis that more than two independent samples were drawn from the same population. We also employed the Jonckheere-Terpstra test for ordinal-ordinal comparisons. The Jonckheere-Terpstra tests the null hypothesis that more than two independent samples were drawn from the population with an equal median (Karagöz, 2010). In addition to the non-parametric tests, we used principal components analysis and multiple regression analysis in the second stage. Principal components analysis provides ease of interpretation of the results with fewer components and dimensions as it collects the variables that are correlated with each other into the same category. Regression analysis, on the other hand, provides information about the existence and strength of the relationship between variables and enables the definition of its functional form (Hair et al., 1998).

Study Area

The district of Pendik is Turkey's 10th and Istanbul's 4th most populous district with its 711.894 population (TURKSTAT, 2019). The Sabiha Gökçen Airport, which is one of the busiest airports in Turkey and the world, is within the boundaries of Pendik district and this has contributed to the rapid growth of the district. Both the transforming and newly developing areas within the district make it necessary to develop sustainable urban policies and improve the social and technical infrastructure of the district. The foregoing reasons can therefore be said to be sufficient justification for the selection of Pendik as the study area. Pendik as a municipality has 36 neighbourhoods and 54 primary schools which include 46 public (Figure 1) and 8 private ones (ME, 2020). Public

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primary schools can be considered as the core of the neighbourhoods which are accepted as basic units in urban planning. Parents do not have the opportunity to choose the primary school their wards attend, since students are registered in public primary schools according to their addresses of residence in Turkey. Therefore, the spatial characteristics of public primary schools should be among the main priorities of urban policies aimed at improving the quality of urban life for all citizens. For this reason, the present study has been built on public primary schools. The total number of students in 46 public primary schools is 43.622 according to the data found in official web sites of these schools. The number of students per teacher in public primary schools is 21 which is higher than the country average of 18. Likewise, the number of students per classroom (33) is significantly above the country's average of 22 (ME, 2020).

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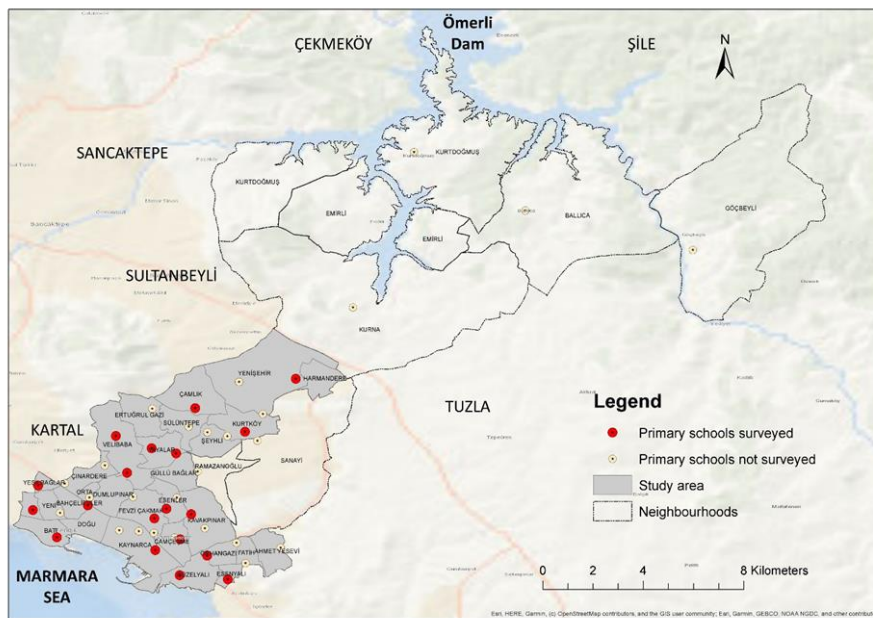
Figure 2. The distribution of public primary schools within the boundaries of Pendik district and the study area (Produced by authors. The source of the school locations: (ME, 2019) Ministry of Education Construction and Real Estate Department)

As stated previously, the district of Pendik has 36 neighbourhoods. Five neighbourhoods (Emirli, Kurdoğmuş, Ballıca, Kurna, and Göçbeyli) are situated in rural areas and two (Sanayi and Ramazanoğlu) in industrial area. Therefore, these neighbourhoods were excluded from the study area. The total population of the study area (702.055) covers 98,62% of the district's population. Figure 2 shows the boundaries of Pendik district, the study area and the location of the primary schools.

While determining the sample for the survey, public primary schools in Pendik district were clustered through Hierarchical Cluster Analysis according to the variables of socio-economic development (Figure 3a), population density (Figure 3b), and travel distance to the district centre[2] (Figure 3c). After that, the surveys were conducted in schools that were randomly selected to represent each cluster in proportion to the number of (primary school) pupils in each neighbourhood cluster (Figure 3d). For

[2] The location of Pendik train station, which is inside the old city centre in Batı Neighbourhood and adjacent to the traditional Pendik downtown, has been accepted as the district centre. The station serves both as a High-Speed Train and Marmaray station, and is the place where the human mobility is highest in Pendik

a population of 42.769 students in the study area, the sample size was calculated as 653 for the 0,05 confidence interval and the 99% confidence level. Within the scope of the study, responses to 807 questionnaires were received, and this is above the minimum sample size of 653 in given confidence level and confidence interval.

Figure 3. Hierarchical Cluster Analysis: Variables and Clusters
(**3a:** Socio-Economic Development Indexes of neighbourhoods (SEDI);
3b: Population density of neighbourhoods;
3c: Distance of neighbourhoods to the city centre;
3d: Clusters formed as a result of Hierarchical Cluster Analysis)
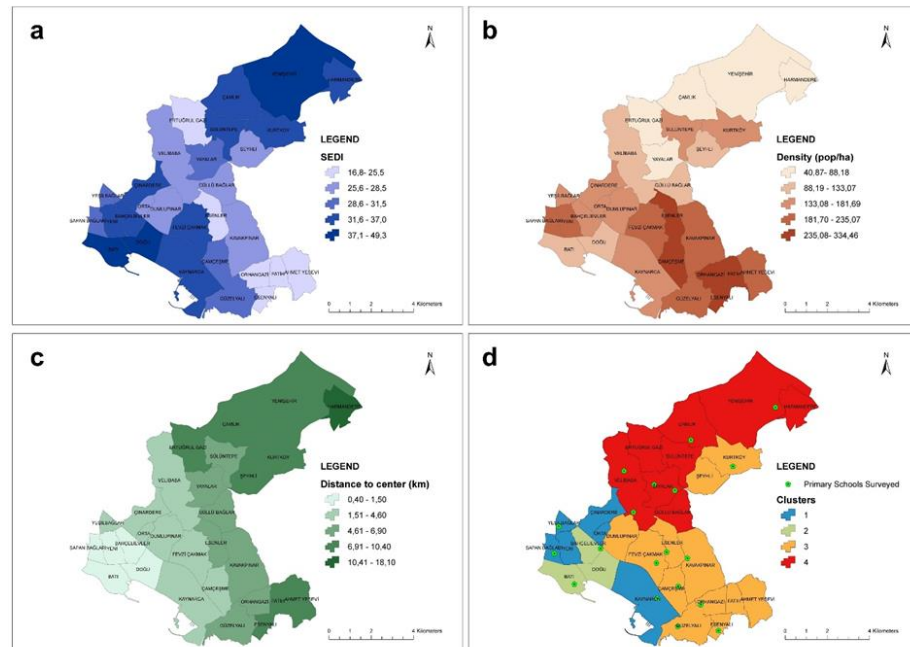
After determining the neighbourhoods and schools to be surveyed through Hierarchical Clustering Analysis, we first forwarded the prepared questionnaire to the Provincial Directorate of National Education and obtained the necessary permissions. Later, we held face-to-face meetings with school principals and administrators and then we presented the prepared online questionnaire to various classroom teachers. The classroom teachers ensured the participation of parents in the survey through WhatsApp groups. In this way, we conducted a survey with 807 parents in the selected 19 public primary schools[3]. The questionnaire form consists of a total of 37 questions asked in the following 4 subsections:

- 4 descriptive questions (participant's name/surname, name of student's school, student's class and branch);
- 11 multiple-choice questions aimed at determining the personal characteristics of individuals;
- 19 Likert type questions (with 5 options) for the evaluation of individuals regarding the spatial characteristics of the primary school;
- 3 questions, two of which are open-ended, to determine the level of satisfaction of individuals with the school.

[3] In the first stage, a total of 920 questionnaires were collected. The validity of these forms was examined one by one, and 54 questionnaires that were incomplete or inconsistent or were double-entered were eliminated. Later, in order for the number of questionnaires in each cluster to be proportional to the number of students in that cluster, 59 questionnaires were randomly extracted from the clusters with a large number of surveys using the Random Number Generator in M.S. Excel. The resulting 807 questionnaires were used in the analysis.

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FINDINGS AND DISCUSSION
Descriptive Statistical Findings
In the first section of the questionnaire, the respondents were asked about personal and residential characteristics. The main descriptive statistics derived from the first section of the questionnaire are summarized in Table 2. The key findings on personal characteristics can be laid out as follows:

- The fact that 84.9% of the respondents of the survey were women suggests that mothers were more interested in primary school pupils than fathers.
- Majority (80%) of parents who have children in primary schools are between 30 and 44 years old.
- In terms of education level of participating parents, high school graduates rank at 35.4%.
- Most (54%) of the participants have two children. The average number of children among the households who participated in the survey was found to be 2.34.
- The average household size among the survey respondents was found to be 4.4. The fact that this size is above the Pendik average of 3.49 can be explained by the fact that families without children are outside the scope of the survey.
- Since the majority of the respondents are women, the rate of non-working people among the participants is considerably high.
- As the duration of residence in the same house increases, the effect of the primary school on housing choice decreases significantly ($\chi2$: 0.004). The location of the primary school was effective in parents' housing choice for 66.6% of those who changed their residence within the last two years.

Table 2. Personal and residential characteristics of the survey respondents

PERSONAL CHARACTERISTICS		Frequency	Percent
Gender	Female	681	84,9
	Male	121	15,1
	Total	**802**	**100,0**
Age	20-24	12	1,5
	25-29	66	8,2
	30-34	252	31,4
	35-39	267	33,3
	40-44	147	18,3
	45-49	54	6,7
	50-54	4	0,5
	55-59	1	0,1
	Total	**803**	**100,0**
Education	Illiterate	4	0,5
	Literate	7	0,9
	Primary school graduate	152	18,9
	Secondary school graduate	150	18,6
	High school graduate	285	35,4
	Associate Degree	87	10,8

	Undergraduate	101	12,5
	Graduate	20	2,5
	Total	**806**	**100,0**
Number of children in the family	1 Child	91	11,3
	2 Children	435	54,0
	3 Children	220	27,3
	4 Children	36	4,5
	5 Children or more	23	2,9
	Total	**805**	**100,0**
People you live with in your family	Mother, father and child / children	665	83,2
	Mother, father, grandparents and child / children	81	10,1
	Mother and child / children	35	4,4
	Father and child / children	18	2,3
	Total	**799**	**100,0**
Working status	Working	260	37,0
	Not working	442	63,0
	Total	**702**	**100,0**
Family monthly income	2000 TL and below	130	16,3
	2001- 4000 TL	416	52,3
	4001- 6000 TL	154	19,3
	6001- 8000 TL	48	6,0
	8000 TL and above	48	6,0
	Total	**796**	**100,0**
RESIDENTIAL CHARACTERISTICS		**Frequency**	**Percent**
Duration of residence in the house	Less than 2 years	45	5,6
	2- 5 years	114	14,1
	6- 10 years	241	29,9
	11- 15 years	210	26,0
	16 years or above	197	24,4
	Total	**807**	**100,0**
Residence – School relationship *(Did the primary school your child attended have an impact on choosing the house you live in?)*	No direct impact	335	41,8
	Had little effect	72	9,0
	Had an effect	176	21,9
	It had a lot of impact	138	17,2
	It was the most important factor	81	10,1
	Total	**802**	**100,0**

In the second section of the questionnaire, 19 separate Likert-type questions were asked about the satisfaction level of the parents with the spatial features of the primary schools. The results obtained on the basis of these responses are shown on Table 3.

The number of valid answers for each question indicates that the awareness of disabled compliance and educational facilities is lower than the others. Based on the average values of each answer, primary schools appear to do better in terms of basic physical needs (heating, lighting, security, equipment, classroom size, hygiene, etc.) compared to functional requirements (sports fields, educational facilities, activity spaces, etc.) (See Table 3).

Table 3. Spatial Adequacy Contingency Table

Spatial features	N (Valid answers)	Very Insufficient / Poor (1)	Insufficient / Poor (2)	Medium (3)	Sufficient / Good (4)	Very Sufficient / Good (5)	Average Value	Standard Deviation
Classroom size	793	60	115	327	259	32	3,11	0,962
		7,60%	14,50%	41,20%	32,70%	4,00%		
Size of school garden	799	79	156	236	262	66	3,10	1,114
		9,90%	19,50%	29,50%	32,80%	8,30%		
Size of sports fields	741	235	225	155	111	15	2,25	1,116
		31,70%	30,40%	20,90%	15,00%	2,00%		
Size of activity spaces	746	184	214	198	127	23	2,45	1,126
		24,70%	28,70%	26,50%	17,00%	3,10%		
Educational facilities	692	242	193	145	93	19	2,21	1,141
		35,00%	27,90%	21,00%	13,40%	2,70%		
Activity facilities	740	134	182	242	159	23	2,67	1,096
		18,10%	24,60%	32,70%	21,50%	3,10%		
Sports facilities	761	171	235	208	127	20	2,46	1,091
		22,50%	30,90%	27,30%	16,70%	2,60%		
Canteen and cafeteria facilities	773	97	202	255	197	22	2,80	1,046
		12,50%	26,10%	33,00%	25,50%	2,80%		
Security measures and precautions	742	65	93	232	276	76	3,28	1,088
		8,80%	12,50%	31,30%	37,20%	10,20%		
School and building doors	802	61	117	213	284	127	3,37	1,140
		7,60%	14,60%	26,60%	35,40%	15,80%		
Traffic safety	799	203	202	193	163	38	2,54	1,205
		25,40%	25,30%	24,20%	20,40%	4,80%		
School accessibility	795	17	36	189	402	151	3,80	0,872
		2,10%	4,50%	23,80%	50,60%	19,00%		
Parking facilities	730	305	217	120	74	14	2,01	1,078
		41,80%	29,70%	16,40%	10,10%	1,90%		
Heating and lighting	794	14	25	148	370	237	4,00	0,878
		1,80%	3,10%	18,60%	46,60%	29,80%		
Equipment	791	76	132	216	275	92	3,22	1,148
		9,60%	16,70%	27,30%	34,80%	11,60%		
Hygiene and cleanliness	794	108	123	233	236	94	3,11	1,208
		13,60%	15,50%	29,30%	29,70%	11,80%		
Architectural and aesthetic features	756	82	165	240	226	43	2,98	1,086
		10,80%	21,80%	31,70%	29,90%	5,70%		
Compatibility for the disabled	671	66	114	176	240	75	3,21	1,151
		9,80%	17,00%	26,20%	35,80%	11,20%		
Landscaping and gardening	771	107	172	273	169	50	2,85	1,111
		13,90%	22,30%	35,40%	21,90%	6,50%		

In the last section of the questionnaire, the respondents were asked to evaluate their overall satisfaction with the primary schools their wards are enrolled in. The average overall satisfaction rating in Likert scale was measured as 3,34, which is slightly above the middle value (3,00) (See Table 4). On the other hand, the average value of 19 spatial satisfaction assessments is calculated as 2,92, which is smaller than the overall satisfaction value. This illustrates the possible effects of non-spatial factors on the overall satisfaction level. Clues to these possible effects can be found in the answers to the open-ended questions asked the participants.

In addition to all these Likert-type questions, the respondents were asked to assess the schools from both the positive and negative sides with two open-ended questions. The open-ended questions offer hints about the non-spatial factors such as the quality of teachers and school management that influence the overall satisfaction with the schools

(Table 5). In addition, security appears to be the main concern of the survey respondents according to the answers to the open-ended questions.

Table 4. The overall satisfaction level with the primary schools

Level of overall satisfaction	Frequency	Percentage of Valid Answers	Average	Mode	Standard Deviation
I am not satisfied at all	31	3,8			
Less satisfied	93	11,5			
I am moderately satisfied	341	42,3	3,34	3,00	0,954
I am quite satisfied	252	31,2			
I am very satisfied	90	11,2			
Total	**807**	**100**			

Table 5. Answers to the open-ended questions

Question	Answers (by subject)	Frequency	Percentage
What are the positive aspects?	No Positive Aspects	26	8,39%
	Security	32	10,32%
	The Building and Its Surroundings	45	14,52%
	Teachers and Administration	82	26,45%
	Accessibility	75	24,19%
	Other	50	16,13%
	TOTAL	**310**	**100%**
What are the negative aspects?	No Negative Aspects	10	3,01%
	Security	145	43,67%
	The Building and Its Surroundings	71	21,39%
	Teachers and Administration	1	0,30%
	Hygiene and Cleanliness	25	7,53%
	Other	80	24,10%
	TOTAL	**332**	**100%**

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The Change in Satisfaction Level According to Personal and Residential Characteristics

We first investigated, within the framework of the study, whether the degree of satisfaction with the spatial features of primary schools varies according to personal and residential characteristics. We used personal and residential characteristics as independent variables, and the satisfaction levels of parents regarding the spatial adequacies of primary schools as dependent variables. We employed the Kruskal Wallis test for nominal-ordinal comparisons and the Jonckheere-Terpstra test for ordinal-ordinal comparisons.

Table 6 displays the results of the nonparametric tests. According to these results, the level of satisfaction with 15 out of 19 spatial characteristics varies significantly based on at least one of the personal and residential

characteristics. The main findings derived from Table 6 can be listed as follows:

- The level of satisfaction with the spatial characteristics of public primary schools differs mostly according to the income level. As the income level increases, the level of satisfaction increases significantly in terms of hygiene, heating, lighting, equipment, security, traffic safety and accessibility. Only the level of satisfaction with the size of the school garden decreases as the income level increases.

- Hygiene and cleanliness are the spatial attributes most susceptible to personal characteristics. Since women are more susceptible to hygiene, their levels of satisfaction relative to men are also very poor. Parents aged 30-39 have a lower degree of satisfaction with hygiene and cleanliness than other age groups.

- The higher the education level, the lower the level of satisfaction in terms of school garden, sports, canteen, cafeteria and parking facilities.

- The level of satisfaction of those who say the primary school their children attend has an effect on the choice of their housing is higher than those who do not share this opinion.

- The level of satisfaction with the spatial characteristics of primary schools does not vary depending on the number of children in the family.

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Table 6. The change in satisfaction level according to personal and residential characteristics (p values)

Satisfaction with Spatial Features	Kruskal Wallis Test			Jonckheere-Terpstra Test					
	Gender	Working Status	Family Type	Age	Edu-cation Status	Number of Children	Duration of Resi-dence	Resi-dence-School Relatio nship	Household Monthly Income
Classroom size	0,771	0,346	0,993	0,281	0,402	0,913	0,659	0,148	0,598
Size of school garden	0,435	0,391	0,797	*0,047*	*0,001*	0,588	0,242	0,436	*0,020*
Size of sports fields	0,709	0,582	0,856	*0,031*	*0,002*	0,832	*0,012*	0,070	0,103
Size of activity spaces	0,910	0,848	0,447	0,359	0,054	0,675	0,119	0,187	0,920
Educational facilities	0,102	*0,017*	0,939	0,971	0,836	0,406	0,815	0,544	*0,027*
Activity facilities	0,239	0,094	0,310	0,520	0,862	0,346	0,980	0,158	0,884
Sports facilities	0,596	0,657	0,645	0,061	*0,009*	0,556	0,314	*0,034*	0,199
Canteen and cafeteria facilities	0,917	0,497	0,304	0,958	*0,004*	0,563	0,742	0,737	0,837
Security measures and precautions	0,884	0,207	0,475	*0,043*	0,250	0,126	0,848	0,056	*0,023*
School and building doors	0,762	0,258	0,463	0,327	0,350	0,098	0,593	*0,039*	*0,001*
Traffic safety	0,886	0,075	0,546	0,145	0,234	0,270	0,383	0,589	*0,000*
School accessibility	0,213	0,651	0,641	*0,015*	0,113	0,629	0,274	0,815	*0,004*
Parking facilities	0,416	*0,015*	0,199	0,532	*0,017*	0,862	0,758	0,154	0,220
Heating and lighting	0,499	0,460	0,565	0,219	0,932	0,073	0,337	0,365	*0,044*
Equipment	*0,038*	*0,001*	0,792	0,121	0,070	0,173	0,564	0,124	*0,000*
Hygiene and cleanliness	*0,010*	*0,004*	0,814	*0,010*	0,052	0,500	0,304	0,125	*0,000*

Architectural and aesthetic features	0,084	0,645	0,051	0,638	0,808	0,491	0,190	0,768	0,167
Compatibility for the disabled	***0,031***	0,752	0,247	0,524	0,396	0,595	0,536	***0,045***	0,220
Landscaping and gardening	***0,013***	0,315	***0,032***	0,091	0,129	0,146	0,415	***0,023***	0,976

* The p values written in bold indicate that the differentiation of the satisfaction level from
the spatial feature in the relevant row according to the personal or residential feature in
the relevant column is significant at the 0.05 level.

**The Change in Satisfaction Level According to the Neighbourhood
and School Characteristics**

Secondly, we questioned whether the degree of satisfaction with the
spatial features of primary schools differ according to the neighbourhood
and school characteristics. We employed the Jonckheere-Terpstra test for
these comparisons since both variables in row and column are ordinal. As
seen in Table 7, the level of satisfaction with the spatial features of
primary schools differs statistically according to both the neighbourhood
and school characteristics.

The main findings derived from Table 7 can be listed as follows:

- As the socio-economic development level of the neighbourhoods
  increases, the level of satisfaction with the spatial features of the
  schools (10 out of 19 spatial features) increases significantly. These
  results are similar to the abovementioned income level - satisfaction
  relationship.

- The satisfaction level of 12 out of 19 spatial features of primary
  schools differs according to the total number of students in schools.
  Among these, only the satisfaction level of 'classroom size' decreases
  as the number of students increases. The level of satisfaction with
  other spatial features and facilities increases as the number of
  students increases. This situation can be explained by the rise in the
  financial opportunities and size of the school as the number of
  students increases. Schools with a small number of students continue
  their education mostly in old buildings and small areas in Pendik
  district.

- As the school and / or area of garden per student increases, the level
  of satisfaction with the sports and activity areas in the school
  increases. However, as the school area per student increases,
  satisfaction with hygiene, and cleanliness decreases. On the other
  hand, it can be deduced from the test results that the increase in the
  school area per student makes the school more compatible for
  students with disabilities.

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Table 7. The change in satisfaction level according to the neighbourhood and school characteristics

	Jonckheere-Terpstra Test					
Grouping Variable	Socio-Economic Development Index		Number of Students		Student - Teacher Ratio	
Level of satisfaction on	Std. J-T Statistic	Sig. (2-tailed)	Std. J-T Statistic	Sig. (2-tailed)	Std. J-T Statistic	Sig. (2-tailed)
Classroom size	**2,618**	**0,009**	**-3,304**	**0,001**	**-7,425**	**0,000**
Size of school garden	0,831	0,406	**3,510**	**0,000**	-0,067	0,946
Size of sports fields	1,927	0,054	**4,141**	**0,000**	-0,010	0,992
Size of activity spaces	**2,588**	**0,010**	**3,302**	**0,001**	-0,152	0,879
Educational facilities	**2,530**	**0,011**	**3,458**	**0,001**	0,773	0,440
Activity facilities	**3,815**	**0,000**	**2,777**	**0,005**	0,211	0,833
Sports facilities	1,414	0,157	**2,618**	**0,009**	-0,883	0,377
Canteen and cafeteria facilities	**2,373**	**0,018**	**5,127**	**0,000**	1,834	0,067
Security measures and precautions	**2,169**	**0,030**	**2,125**	**0,034**	1,554	0,120
School and building doors	**3,738**	**0,000**	-0,310	0,757	0,491	0,623
Traffic safety	1,611	0,107	-0,065	0,948	1,820	0,069
School accessibility	0,180	0,857	-1,311	0,190	-1,728	0,084
Parking facilities	-0,343	0,732	**3,048**	**0,002**	-0,402	0,688
Heating and lighting	0,583	0,560	-0,420	0,674	-1,189	0,234
Equipment	**3,332**	**0,001**	1,236	0,216	0,878	0,380
Hygiene and cleanliness	**2,530**	**0,011**	-0,220	0,826	-1,904	0,057
Architectural and aesthetic features	1,636	0,102	**2,570**	**0,010**	**2,253**	**0,024**
Compatibility for the disabled	0,866	0,387	-0,707	0,479	0,510	0,610
Landscaping and gardening	**2,133**	**0,033**	**2,260**	**0,024**	1,078	0,281
	Jonckheere-Terpstra Test					
Grouping Variable	School Building - Student Ratio		School Garden - Student Ratio		School Gross Area - Student Ratio	
Level of satisfaction on	Std. J-T Statistic	Sig. (2-tailed)	Std. J-T Statistic	Sig. (2-tailed)	Std. J-T Statistic	Sig. (2-tailed)
Classroom size	1,464	0,143	1,361	0,174	1,160	0,246
Size of school garden	**2,371**	**0,018**	**3,665**	**0,000**	**4,415**	**0,000**
Size of sports fields	**3,201**	**0,001**	**2,636**	**0,008**	**2,753**	**0,006**
Size of activity spaces	**3,042**	**0,002**	0,901	0,367	**2,161**	**0,031**
Educational facilities	0,916	0,360	-1,821	0,069	-0,266	0,791
Activity facilities	1,417	0,156	0,793	0,428	1,905	0,057
Sports facilities	1,426	0,154	0,369	0,712	0,554	0,580
Canteen and cafeteria facilities	0,651	0,515	-0,546	0,585	0,431	0,666
Security measures and precautions	0,903	0,367	**-3,348**	**0,001**	-1,913	0,056
School and building doors	0,941	0,347	-1,070	0,285	-1,835	0,067
Traffic safety	1,573	0,116	-1,677	0,094	-0,894	0,371
School accessibility	0,842	0,400	1,622	0,105	0,680	0,497
Parking facilities	1,655	0,098	0,143	0,887	0,892	0,372
Heating and lighting	0,331	0,740	-1,729	0,084	-1,178	0,239
Equipment	0,695	0,487	-0,903	0,367	-0,481	0,631
Hygiene and cleanliness	-1,281	0,200	**-4,978**	**0,000**	**-3,973**	**0,000**
Architectural and aesthetic features	1,839	0,066	**-4,684**	**0,000**	-1,492	0,136
Compatibility for the disabled	**3,595**	**0,000**	**-3,287**	**0,001**	-0,605	0,545
Landscaping and gardening	1,949	0,051	-1,259	0,208	-0,098	0,922

* The p (significance) values written in bold indicate that the differentiation of the satisfaction level from the spatial feature in the relevant row according to the personal or residential feature in the relevant column is significant at the 0.05 level. The J-T test values indicate the direction (negative or positive) and strength of the relationship.

The Influence of Spatial Features on the Overall School Satisfaction

We carried out a multiple regression analysis to test the degree to which the level of spatial adequacies of primary schools explains the level of overall satisfaction with primary schools. In this context, we first reduced 19 spatial features to two factors using principal component analysis.

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The results of the principal component analysis are listed on Table 8. Since the "Landscaping and gardening" variable takes values below 0.5 (0.407 and 0.466) in both factors, the analysis was repeated by removing this variable[4]. For this reason, the table contains 18 out of 19 variables. The KMO value (0.937), which tests the observed and partial correlation coefficients by comparing their significance, obtained through repeated analysis showed that the suitability of the sample for principal component analysis is excellent.

According to the results of the analysis, 18 variables related to the satisfaction levels of individuals regarding the spatial characteristics of the primary school were grouped into 2 components. Among these components, 45.12 percent of the total change is explained by the first component and 9.94 percent of the total change is explained by the second components. With these two components, 55.05% of the total change is explained (Table 8).

Considering the variables included in each component, we named the first component as "satisfaction with facilities and size of spaces" and the second component as "physical and environmental satisfaction". The Cronbach's Alpha values (see Table 8) obtained in the reliability analysis which measures the internal consistency of the components and variables included, indicate that the scales for the evaluation of individuals regarding the objective spatial characteristics of the primary school are reliable and valid.

[4] Although there are different approaches to how to component weights can be interpreted, if the component weight of a variable is 0.50 and above in cases where the sample size is 100 or more, they are considered to be practically significant (Hair et al., 1998).

Table 8. The summary of principal components analysis

Pattern Matrix	Component Weight	Total Variance Explained			
		Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
		Total	% of Variance	Cumulative %	Total
1. Component		8,121	45,12	45,12	7,016
Size of sports fields	0,946				
Size of activity spaces	0,926				
Sports facilities	0,819				
Size of school garden	0,779				
Educational facilities	0,767				
Activity facilities	0,738				
Canteen and cafeteria facilities	0,516				
Parking facilities	0,509				
Classroom size	0,501				
2. Component		1,789	9,94	55,05	6,495
School and building doors	0,800				
Heating and lighting	0,793				
Security measures and precautions	0,718				
Compatibility for the disabled	0,688				
Hygiene and cleanliness	0,683				
Equipment	0,652				
Traffic safety	0,583				

School accessibility	0,575
Architectural and aesthetic features	0,520

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
Rotation converged in 9 iterations.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0,937**
Bartlett's Test of Sphericity	Approx. Chi-Square	**4961,421**
	df	**153**
	Sig.	**0,000**

We used the factor scores obtained by the principal component analysis as independent variables and the level of overall satisfaction with primary schools as a dependent variable in linear multiple regression analysis. Both components were included in the regression analysis, respectively, using the "stepwise" method. As shown on Table 9, 46.8% of the variance is explained by the first model in which only the first component is included, and 52.7% of the variance is explained by the second model in which two components are included together. Therefore, the regression equation was created according to the second model. The equation of the model is as follows:

$$Y' = \text{The level of overall satisfaction with primary schools}$$
$$Y' = \beta_0 + \beta_1 X_1 + \beta_2 X_2$$
$$Y' = 3,262 + 0,489 \text{ (1st factor)} + 0,289 \text{ (2nd factor)}$$

Table 9. The summary of regression model

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	**Std. Error**	**Beta**		
1	(Constant)	3,262	0,031		105,392	0,000
	1.Component	0,656	0,031	0,684	21,181	0,000
2	(Constant)	3,262	0,029		111,838	0,000
	1.Component	0,489	0,036	0,510	13,657	0,000
	2.Component	0,289	0,036	0,301	8,073	0,000

Model Summary[c]

	R	R Square	Adjusted R Square	Std. Error of the Estimate
Model 1	,684[a]	0,468	0,467	0,700
Model 2	,727[b]	0,529	0,527	0,659

a. Predictors: (Constant), REGR factor score   2 for analysis 1
b. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1
c. Dependent Variable: Overall school satisfaction

Correlation REGR factor score 1 for analysis 1 whit REGR factor score 2 for analysis 1	-0,579
VIF (Variance Inflation Factor)	1,504

Tests of Normality

Kolmogorov-Smirnov (Lilliefors Significance Correction)	Statistic	df	Sig.
	0,037	511	0,09

According to the results of the regression analysis, the variables that make up the 1st factor have a higher level of explanation of the overall

satisfaction. Based on the loadings of the components that make up the 1st factor, the most effective components are 'the size of sports fields' (0.946) and 'the size of activity spaces' (0.926). Therefore, we can say that 'the size of sports fields' and' the size of activity spaces' are the most important spatial features on the level of overall satisfaction with the primary schools. Based on the factor loadings of the components that make up the second factor, 'school and building doors' (0.800) and 'heating and lighting' (0.793) are the most effective spatial features.

CONCLUSION

The present study investigates the change in parents' satisfaction with the spatial features of public primary schools based on personal, residential, school, and district characteristics and it measures to what extent the spatial features explain the overall satisfaction with primary schools. Previous studies relating primary schools – around which neighbourhoods are usually formed- to quality of life and urban planning mostly focus on accessibility and spatial distribution. There is a lack of studies linking objective and subjective evaluations of the spatial quality and adequacy of primary schools with urban planning agenda. The present study differs from the previous studies since it associates the spatial adequacies of public primary schools with urbanization and urban planning from three aspects. Firstly, the clusters which are generated to select the schools to be surveyed reflect the urbanization patterns of the districts in terms of urban density, urban sprawl (distance to the centre), and urban segregation (socio-economic differences). Secondly, the questionnaire consists of subjective evaluations on both accessibility to and spatial adequacies of the schools, which are two essential components of urban planning regulations in terms of the social and technical infrastructure in Turkey. Thirdly, the cross-tabulations involve statistical analyses linking subjective evaluations of the spatial quality and adequacy of primary schools with objective indicators that reveal the spatial adequacies of public primary schools as an important social infrastructure in urban planning and quality of life studies.

The main results of the present study can be classified into three subtitles: The change in satisfaction level based on personal and residential characteristics, the change in satisfaction level according to the neighbourhood and school characteristics, and the influence of spatial features on the overall school satisfaction. Among the personal characteristics, 'income level' is seen as the factor that affects the satisfaction of the school's spatial characteristics the most. However, one of the most remarkable outcomes of this study is that as the level of income increases, the level of satisfaction generally increases despite the fact that income levels can differ significantly even among parents at the same school. On the other hand, given that there is a significant and positive relationship between the socio-economic development index of the neighbourhoods and school satisfaction, it can be said that the

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physical conditions are better in the schools in neighbourhoods where high-income families reside, this is likely due to donations from parents. The results of the study reveal that the number of students and the size of the building and garden/compounds of primary schools also affect parent satisfaction. This also highlights the importance of applying the minimum standards and accessibility criteria in urban planning legislation.

According to the model obtained by multiple regression, one-unit increase in the first factor (satisfaction with facilities and size of spaces) induces an increase of 0.489 units in the overall satisfaction level from primary schools, while one-unit increase in the second factor (physical and environmental satisfaction) causes an increase of 0.289 units in the overall satisfaction level from primary schools. 'The satisfaction with the size of sports fields' (factor load: 0.946) and 'the satisfaction with the size of activity spaces' (factor load: 0.926), which are sub-dimensions of the first factor that make up 46.8% of the total variance in the overall school satisfaction level have the largest influence on the overall satisfaction level. Therefore, these two dimensions have priority in improvements aimed at increasing the urban life quality or general satisfaction with primary schools for the Pendik district of Istanbul.

The regression model can explain 52.9% of the variance in the overall satisfaction level of parents with primary school. This shows that subjects such as school management, teachers, and curriculum may have an effect on 47.1% of the variance, which cannot be explained by spatial characteristics, in the overall satisfaction level.

Since the satisfaction with primary schools is one of the most important components of urban life quality indicators, the results of this study are expected to contribute to the implementation to increase the quality of urban life. Subjective evaluations provide a perspective that goes beyond the judgment of those who set the standards by revealing the individual's personal adaptation possibilities to objective conditions. The present study which enables subjective assessments to be compared with objective data in urban quality of life measurements can help urban policymakers compare spatial standards with user perception and identify deficiencies accordingly. Thus, it may be possible to both improve public service delivery and increase the quality of urban life. On the other hand, this study provides a roadmap to improve service provision for private educational institutions based on customer satisfaction since it reveals changing perceptions on different spatial features of schools. Repeating similar studies in different cases (both in rural and urban areas), different time periods, and for different education levels will be beneficial in terms of enabling the results to be compared. Further studies are expected to deepen the investigations focused on the spatial and non-spatial aspects of primary schools as the core elements of neighbourhoods, which are the basis of urban planning.

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REFERENCES
Ahmetoğlu, E., & Acar, İ. H. (2017). Parents'satısfactıon Wıth Theır
Chıldren's Educatıonal Experıences in Early Chıldhood Period. *Electronic
Turkish Studies*, *12*(6), 1-14.

Alpakut, S. (2017). Öğrenci Velilerinin Özel Okullardan Memnuniyet
Düzeylerinin Yapısal Eşitlik Modeli ile Değerlendirilmesi. *Dokuz Eylül
Üniversitesi İktisadi İdari Bilimler Fakültesi Dergisi*, *32*(2), 355-368.

Atik, A., Taçoral, E., & Altunkasa, M. F. (2014). Kent Halkının Kentsel
Yaşam Memnuniyeti Üzerinde Etkili Sosyo-Demografik Özelliklerinin
Belirlenmesi Üzerine Bir Araştırma: Kemaliye Örneği. *İnönü Üniversitesi
Sanat ve Tasarım Dergisi*, *4*(9), 21-33.

Aydoğan, İ. (2012). Okul Binalarının Özellikleri ve Öğrenciler Üzerine
Etkileri. *Milli Eğitim Dergisi*, *42*(193), 29-43.

Bakioğlu, A., & Bahçeci, M. (2010). Velilerin okul imajına ilişkin
görüşlerinin incelenmesi. *31*, 25-55.

Berryman, A. (2015). Modeling Public Satisfaction with School Quality: A
Test of the American Customer Satisfaction Index Model.
https://scholarworks.gsu.edu/eps_diss/117

Bognar, G. (2005). The concept of quality of life. *Social theory and practice*,
31(4), 561-580.

Boylu, A. A., & Paçacıoğlu, B. (2016). Yaşam kalitesi ve göstergeleri.
Akademik Araştırmalar ve Çalışmalar Dergisi (AKAD), *8*(15), 137-150.

Bozyiğit, S. (2017). Özel Okulların Eğitim Hizmetlerine İlişkin Veli
Beklentisi ve Algısı: Nitel Bir Araştırma. ICPESS (International Congress
on Politic, Economic and Social Studies),

424

Brown, K., & Coulter, P. B. (1983). Subjective and objective measures of police service delivery. *Public Administration Review*, *43*(1), 50-58.

Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). *The quality of American life: Perceptions, evaluations, and satisfactions*. Russell Sage Foundation.

Cevher, E. (2015). Yükseköğretimde Hizmet Kalitesi ve Kalite Algısının Belirlenmesine Yönelik Bir Araştırma. *Journal of International Social Research*, *8*(39), 804-814.

Charbonneau, E., Van, R., & Gregg, G. (2012). Performance measures and parental satisfaction with New York City schools. *The American Review of Public Administration*, *42*(1), 54-65.

Çamlıca, C. (2016). Kktc İlkokullarında Okul-Veli Memnuniyeti (Yedidalga Örneği). *International Journal of New Trends in Arts, Sports & Science Education (IJTASE)*, *5*(3), 40-49.

Ekinci, C. E., & Burgaz, B. (2007). Hacettepe üniversitesi öğrencilerinin bazı akademik hizmetlere ilişkin beklenti ve memnuniyet düzeyleri. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, *33*(33), 120-134.

Epstein, J. L. (1985). A question of merit: Principals' and parents' evaluations of teachers. *Educational Researcher*, *14*(7), 3-10.

Fantuzzo, J., Perry, M. A., & Childs, S. (2006). Parent satisfaction with educational experiences scale: A multivariate examination of parent satisfaction with early childhood education programs. *Early Childhood Research Quarterly*, *21*(2), 142-152.

Favero, N., & Meier, K. J. (2013). Evaluating Urban Public Schools: Parents, Teachers, and State Assessments. *Public Administration Review*, *73*(3), 401-412. https://doi.org/10.1111/puar.12022

Friedman, B. A., Bobrowski, P. E., & Geraci, J. (2006). Parents' school satisfaction: ethnic similarities and differences. *Journal of Educational Administration*, 471-486.

Friedman, B. A., Bobrowski, P. E., & Markow, D. (2007). Predictors of parents' satisfaction with their children's school. *Journal of Educational Administration*, 278-288.

Galster, G. (1987). Identifying the correlates of dwelling satisfaction: An empirical critique. *Environment and Behavior*, *19*(5), 539-568.

Gibbons, S., & Machin, S. (2008). Valuing school quality, better transport, and lower crime: evidence from house prices. *oxford review of Economic Policy*, *24*(1), 99-119.

Gibbons, S., & Silva, O. (2011). School quality, child wellbeing and parents' satisfaction. *Economics of Education Review*, *30*(2), 312-331.

Hair, J. F., Anderson, R., Tatham, R., & Black, W. (1998). Multivariate Data Analysis Prentice Hall. *Upper Saddle River, NJ*, *730*.

Hastings, J. S., Kane, T. J., & Staiger, D. O. (2005). *Parental preferences and school competition: Evidence from a public school choice program* (0898-2937). https://www.nber.org/papers/w11805

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Jacob, B. A., & Lefgren, L. (2007). What do parents value in education? An empirical investigation of parents' revealed preferences for teachers. *The quarterly journal of economics*, *122*(4), 1603-1637.

James, O. (2009). Evaluating the expectations disconfirmation and expectations anchoring approaches to citizen satisfaction with local public services. *Journal of Public Administration Research and Theory*, *19*(1), 107-123.

Karadağ, E. (2010). İlköğretim okullarında hizmet kalitesi: Veli algılarına dayalı bir araştırma. *Eğitim Ve İnsani Bilimler Dergisi: Teori Ve Uygulama*(1), 19-52.

Karagöz, Y. (2010). Nonparametrik tekniklerin güç ve etkinlikleri. *Elektronik Sosyal Bilimler Dergisi*, *9*(33), 18-40.

Karaküçük, S. A. (2008). Okul Öncesi Eğitim Kurumlarında Fiziksel/Mekansal Koşulların İncelenmesi: Sivas İli Örneği. *Sosyal Bilimler Dergisi/Journal of Social Sciences*, *32*(2), 307-320.

Kelly, J. M. (2003). Citizen satisfaction and administrative performance measures: is there really a link? *Urban Affairs Review*, *38*(6), 855-866.

Kerce, E. W. (1992). *Quality Of Life: Meaning, Measurement, And Models*.

Mahallem. (2016). *Mahallem İstanbul*. Retrieved 13.03.2020 from http://www.mahallemistanbul.com/MahallemSEGE_/

Marans, R. W. (2007). Kentsel Yaşam Kalitesinin Ölçülmesi. *Mimarlık Dergisi*, *335*, 28-35.

Marans, R. W., & Rodgers, W. L. (1975). Toward an understanding of community satisfaction. *Metropolitan America in contemporary perspective*, 299-352.

Massam, B. H. (2002). Quality of life: public planning and private living. *Progress in planning*, *58*(3), 141-227.

ME. (2019). *Ministry of Education Construction and Real Estate Department.Spatial data of primary schools.* Retrieved 15.06.2020 from

ME. (2020). *Ministry of Education* Retrieved 15.06.2020 from http://sgb.meb.gov.tr/www/icerik_goruntule.php?KNO=396

Morgeson, F. V. (2012). Expectations, disconfirmation, and citizen satisfaction with the US federal government: Testing and expanding the model. *Journal of Public Administration Research and Theory*, *23*(2), 289-305.

Nartgün, Ş., & Kaya, A. (2016). Özel Okul Velilerinin Beklentileri Doğrultusunda Okul İmajı Oluşturma. *5*(2), 153-167.

Neal, Z. P., & Watling Neal, J. (2012). The Public School as a Public Good: Direct and Indirect Pathways to Community Satisfaction. *Journal of Urban Affairs*, *34*(5), 469-486. https://doi.org/10.1111/j.1467-9906.2011.00595.x

Okumuş, A., & Duygun, A. (2008). Eğitim Hizmetlerinin Pazarlanmasında Hizmet Kalitesinin Ölçümü Ve Algılanan Hizmet Kalitesi İle N Öğrenci Memnuniyeti Arasındaki İlişki. *Anadolu University Journal of Social Sciences*, *8*(2), 17-38.

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Özbaş, M. (2014). İlköğretim okulu yöneticilerinin aile memnuniyetini karşılama düzeyine ilişkin veli görüşleri. *Eğitim Bilimleri Araştırmaları Dergisi*, *4*(1), 243-258.

Parks, R. B. (1984). Linking objective and subjective measures of performance. *Public Administration Review*, *44*(2), 118-127.

Pendik-Municipality. (2020). *Total surface area of neighbourhoods*. Retrieved 17.07.2020 from https://www.pendik.bel.tr/sayfa/mahalle

Rothstein, J. M. (2006). Good principals or good peers? Parental valuation of school characteristics, Tiebout equilibrium, and the incentive effects of competition among jurisdictions. *American Economic Review*, *96*(4), 1333-1350.

Salihoğlu, T., & Türkoğlu, H. (2019). Konut Çevresi ve Kentsel Yaşam Kalitesi. *Megaron*, *14*, 203-217.

Stipak, B. (1979). Citizen satisfaction with urban services: Potential misuse as a performance indicator. *Public Administration Review*, 46-52.

Stipak, B. (1980). Local governments' use of citizen surveys. *Public Administration Review*, *40*(5), 521-525.

Şahin, G. G. (2011). Üniversite düzeyinde turizm eğitiminde hizmet kalitesi beklenti ve algısına yönelik Ankara'da bir araştırma. *İşletme Araştırmaları Dergisi*, *3*(4), 49-65.

Şensoy, A., & Sağsöz, A. (2015). Öğrenci Başarısının Sınıfların Fiziksel Koşulları ile İlişkisi. *Journal of Kirsehir Education Faculty*, *16*(3), 87-104.

Tayyar, N., & Dilşeker, F. (2013). Devlet ve vakif üniversitelerinde hizmet kalitesi ve imajin öğrenci memnuniyetine etkisi. *SOSYAL VE BEŞERİ BİLİMLER ARAŞTIRMALARI DERGİSİ*(28), 184-204.

Thompson, G. L. (2003). Predicting African American Parents' and Guardians' Satisfaction With Teachers and Public Schools. *The Journal of Educational Research*, *96*(5), 277-285. https://doi.org/10.1080/00220670309597640

TURKSTAT. (2019). *Turkish Statistic Institute 2019 Census Data (Address Based Population Recording System)*. Retrieved 21.06.2020 from https://biruni.tuik.gov.tr/medas/?kn=95&locale=tr

Van Ryzin, G. G. (2004). Expectations, performance, and citizen satisfaction with urban services. *Journal of policy analysis and management*, *23*(3), 433-448.

Van Ryzin, G. G. (2006). Testing the expectancy disconfirmation model of citizen satisfaction with local government. *Journal of Public Administration Research and Theory*, *16*(4), 599-611.

Vural, R. A., & Sadık, F. (2003). İlköğretim okul binalarının fiziksel açıdan değerlendirilmesi. *Eğitim ve Bilim*, *28*(130), 16-23.

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