

A Research on the Determination of Sport Areas Planning Principles in Çanakkale City

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Abstract: Today, people began to be busy with sports to be less effected from the cities dense and also physical and physiological wearing out effects and they appropriated this activity as a life style. The study was carried out in two stages by collecting and analyzing data. In this research, in an urban open-green area system, sport areas which are open to public places, are invested in Çanakkale City's condition. Sport areas' general features, planning principles and standards, have been analyzed under the light of landscape architecture planning principles. Also, questionnaire has been made to determine the request and inclination of the Çanakkale city people towards the sport areas. Statistical analysis among parameters was performed by using SPSS software. Percent (%), mean (df) and cross tabs from statistical techniques were used in data analyzing and chi-square (X^2) analysis was used in hypothesis test. At the end of research, sport areas in the city are determined insufficient about number, quality and equipment elements and taking into consider the results of the questionnaire, planning suggestions have been made about the reconstruction of the current sport areas and about forming new sport areas in a contemporary meaning.

Key Words: Open-Green Area, Planning, Recreation, Sport

Introduction

The problems with the environment, in which the mankind has lived and which always had relations with, started at the end of the 18th century and at the beginning of the 19th century with the development of technology and economic development connected with it, have made big differences and caused the social, economic and physical balance to corrupt.

The increasing population and industrial developments have caused corruption in the human-nature relations, made the need to look for urgent solutions. The protection and restoration of the nature and the creation of environmental conditions is a need for human life. For this reason, it should be acted carefully to handle the developments made in our country for positive affect on human-nature relations, to provide the adaptation of people with nature and mechanical environment with more social, economic and physical planning and with this way to transfer the natural inheritance to the next generations without corrupting its originality (Kesim, 1996).

The open-green areas in use, to develop and increase human health, to create possibilities for exercise and comfort and to increase morale standards of people with activities like observing the nature are urban areas which the individuals from the community and specially young people are interested in a way of active recreation. Because of the dangers which the fast increase of the population and crooked urbanization have caused, the protection of natural sources and nature, preventions which is necessary for people physiological and physical health and the meeting of sports needs which has big advantages among recreative activities, is necessary.

According to Roscam (1982) sports is an event of using empty times. It is natural that as a result of the first human's battle, to protect themselves against nature, occupations such as running, jumping, climbing should be the start of sports. But today, it is known that sports is the most important social strengths of modern

industrial communities. Because time, which is the industrial communities' enemy of activity can be turned healthy with sports. With that reason sports now isn't our times fashion, it is a mean of health for communities. Because with sports, individuals and communities reach the happiness with the ability to move, make dialogues, learn success and unsucess, and progress their personality (Erdem, 1989).

Modern living in urban's dense and heavy pressure keeps today's people physiologically depressed. The time, which the city people spare to rest in the increasing life tempo is going to be a necessity for their physical structure (Memluk, 1974). For this reason, people began to be busy with sports to be less affected from the city's dense and also physical and physiological wearing out affects and they appropriated this activity as a life style.

In this research, in an urban open-green area system, sport areas which are open to public places, are invested in Çanakkale city's conditions. Sport areas' general features, planning principles and standards have been analyzed under the light of landscape architecture planning principles. Also, questionnaires have been made to determine the request and inclination of the Çanakkale city people towards the sport areas.

Materials and Methods

This study was carried out in Çanakkale which has not only a rich history, but also an important potential on natural and cultural resources. Çanakkale, which is located in the narrowest part of Dardanel Bosphorus, is in the North of Karaçay stream, lies a long with sea side and harbours Biga and Gelibolu Peninsulas. It is 335 km to İzmir via Edremit, 212 km to Balıkesir via Can, 305 km to Bursa via Lapseki and 230 km to Edirne and 337 km to İstanbul via Keşan. Gökçeada and Bozcaada, which are Aegean Islands, are located in the south of Bosphorus mouth and belong to Çanakkale Province.

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The sport areas which are within the borders of the municipality of Canakkale city, form the research material. The elements which are a subject for the search, are sport areas, different age groups inside the city population and specially population information about the young population who are able to do active sports, local and foreign literature about the subject.

In the research, Canakkale Meteorology Station Management records have been used to evaluate the climate datum. The information concerning the population is taken from the datum of Government Institute's 2000 General Census. The datum about the sport areas with different characteristic among the city has been taken from the records of Canakkale Youth and Sport Province Management. The study was carried out in two stages by collecting and analyzing data.

Data Collection: The factors which affect planning in Canakkale city has been determined. Sport areas general features-planning principles and standards have been analyzed in a way of physical planning. In the research, sport areas open to public have been taken to concern, schools and private sport areas have been hold outside the research. Also, questionnaire forms were employed to determine the request and inclination of the Canakkale city people towards the sport areas. The studies of Pincombe (1969) and Erdem (1989) were examined and the information obtained from this examination was used in preparing the questionnaire example. Based on the city population, 100 people took part in this questionnaire. The questionnaire was carried out in the city center of Canakkale in October 2002.

Data Analysis: The data collected from questionnaire firstly grouped by using excel software. The groups were:

Age	Time for any sport activities
Sex	Enough areas for sport activities
Education	Easily use the current sport areas
Job (occupation)	Have a sport complex
Monthly income	Facilities in a sport complex
Sportactivity	Most important problem in the current sports areas
Space	Go out for sport activities
Necessary to have a sport area	

Statistical analysis among parameters (mention above) was performed by using SPSS software (SPSS, 1988). Percent (%), mean (df) and cross tabs from statistical techniques were used in data analyzing and chi-square

(X^2) analysis was used in hypothesis test.

Correlation coefficient was also performed to understand the relationships between age groups and sport activities; sex status and sport activities; education status and sport activities; job (occupation) status and sport activities; job (occupation) status and current problems; monthly income and sport activities (Davis, 1986).

Results and Discussion

The Factors Affecting Planning in Canakkale City:

Natural and cultural features are the main affecting factors in planning sport areas. Natural factors are under affect of climate factors. Temperature, rain-falls, moisture and wind are the important climate elements. In cultural factors city's demographic structure comes

into the front plan. Especially the young number whom might join active recreation is the most important factor which affects planning.

The weather is a combination of Mediterranean and Black Sea climates. Although Mediterranean climate is dominant near coast, summer is not as hot as Mediterranean and Aegean Coast. At high places in interior part of the province summer is cool. On the contrary, winters are quite cold. The province gets about 600-800 mm² rain. Throughout the year a cool wind called the "Poyraz" blows from the north-west over the region alternating with a warm wind called the "Lodos", which blows from the South-West and has a more pronounced climate effect than the "Poyraz". The wind speed is 4.4 m/sec (Anonymous, 1999).

According to the results of 2000 General Census, the population of Canakkale city center is 75.810, with 39.558 men (52 %) and 36.252 women (48 %) and the increasing rate of the annual population is 33.92 %. In the total population of the 0-17 age group there are 19.835 people of 9.955 men and 9.880 women, at the 18-30 age group there are 21.629 people of 12.817 men and 8.812 women, at the 31-50 age group there are total of 21.088 people of 10.415 men and 10.673 women and above the age 50 there are total 13.258 people of 6.371 men and 6.887 women (Anonymous, 2000).

The rate of the people who literate in the Canakkale city center is 95 %. The number of schools in the city center is 34 with 20 primary school and 14 high school and the total student number in primary schools, high schools and professional schools is 17.450 (Anonymous, 2002a). And the university students which their number approaches to 14.000 are an important potential whom might join active sport activities.

Sport Areas General Features-Planning Principles and Standards:

Last years increasing population and in urban areas, which extreme urbanization movements have been seen, it is important to plan parks, playgrounds and sport areas with relations between themselves to use urban areas optimally and in many ways.

Sport areas, are the most important factors of the urban open-green area system which are open to public places. Because of this, there is a lot of reason to get on to the sport areas general planning principles.

Sports, which is one of the various kinds of recreation activities, carry an important functional value, in a point of view of recreation, such as movement, variation, difference, health, adventure, know-discover oneself and other social-cultural features (Karaküçük, 1999).

The increasing of the recreation understanding ment to develop sportive movement. Sport which reached to publician success and which affected big national masses made big differences in empty time occupations (Nixon and Jewett, 1969).

Sport, is a varied occupation in a meaning of joining, environment, place and other factors and difference has been seen by time in sportive activities with the affects of developing technology, social and cultural structure, development of the understandings of economy and recreation.

In most countries the most attractive playgrounds and sport areas are streets. Family and street, in urban communities are the most affective elements in the education and socialization of children. For this reason, playgrounds and sport areas should be developed next

to streets of family individuals and children should benefit from them in safety (Ghazzeh, 1998).

Games and sports are a universal cultural event (Moore and Young, 1978; Bedarida and Sutcliffe, 1980 and Appleyard, 1981). The streets which playgrounds and sport areas are collected are important gathering and ecological places. Children gather in these places, they meet and talk with their same ages and elder children and they do various sportive activities (Michelson and Roberts, 1979; Norchis, 1994).

Sports areas are not places only for sportsmen but should be understood as open areas which are closed to construction and traffic, open to everyone. For that reason, sport areas should be planned with the green texture (Erdem, 1989).

Next to the physiologic, biologic and social advantages it gives, sport areas should have the possibility to answer the needs of recreation for people in all ages and genders.

According to Erdem (1989) when choosing places for sport areas; easy arriving, settling at a meteorologically appropriate place, being far from industrial transmission, being inside urban green texture with a completing situation, far from the nearby settlement's noise, being situated in the best landscape are the factors which should be taken into concern.

For the dispersion of sport areas inside the city and for the balance of this dispersion according to sport varieties, the population's demographic structure of some settlements, quarters and quarter units should be taken into concern.

The amount that should be saved for sport areas at urban area is very important because of the majority of the number of individuals, in different age groups, whom might use sport activities. According to Butler (1958) taking present population into concern, 4-4.5da of area should be estimated per 800 people. Lewis (1957) takes 40da for sport areas as minimum measurement and wants the desired standards to be accepted as 80da.

According to Akdogan (1972) in USA the inclination in park planning is towards dispersing them among quarter units, at a distance where almost everyone should not walk more than maximum 1600 m. German Olympic Committee has determined in city public-work plans that a 4 m²/person of usable sport surface is necessary (Erdem, 1989).

According to Chapin (1965), 5da per 1000 people, according to Chaira and Koppelman (1969) 6da per 1000 people is necessary for sport areas (Bakan and Konuk, 1987).

The Analyses of Sport Areas' Planning Principles in the City Center:

The urban population is formed mostly of individuals who can be busy with active sports (82.51%). With its educational and socio-cultural structure, with young and dynamic population although participation to sport activities was expected to be high, like in the general of the country, also in Canakkale the number of individuals participating on enough level active sports is very low. In Canakkale at year 2001, in 21 sport branches, 2047 people whose 1219 is men and 808 is women have participated active sports (Anonymous, 2001). When this number is divided with the city population a result such as 3% is estimated.

18 Mart Sport Complex, Water Sports Education Center, Güzelyali Sportsmen Education Center, 4 Football Quarter Courts, 1 Swimming Pool and Sport Area (the construction is continuing), 3 mini-football

fields are the sport areas in the city (Anonymous, 2002b). In the research, 145.828 m² of active sport areas were determined. For each person 1.92 m² of sport area is ded. When those values are examined, the area which is due to per person in Canakkale, is seen to be under the international standards.

Sport areas, show an unbalanced and insufficient dispersion within the general of the city. The 18 Mart Sport Complex which is the cities most important sport area, is at the center of the city. The complex is under the pressure of a dense settlement and transportation. There is a no open-green area around the complex. Also, the insufficient car park is among the major problems.

These deficiencies are also valid for the other sport areas. Although there is no transportation problem, both the substructure (drainage, lighting) and equipment elements (car park, dressing rooms, garbage can, resting places) are determined to be insufficient. In the sport areas which are mentioned above, there have been come across to very few green texture. The facilities which meet the needs of sportsmen and the community, in present sport areas are insufficient.

The nearly 750 km long coast strip which Canakkale has, have no enough facilities for water sports. This rich water (sea) potential can be a source for specially active and passive water recreation activities. Proper places for under water diving. Shores for sailing and surfing sports with the wind which blows most of the year, provide possibilities for this kind of sports.

The Determination of the Request and Inclination of the Canakkale City People Towards Sport Areas:

Statistical analysis among parameters from the questionnaires was performed by using SPSS software and the results were evaluated to determine the request and inclination of the Canakkale city people towards the sport areas.

According to age groups, 9% below 18, 51% 18 to 30, 29% 31 to 50 and 11% 50 year and above age groups. According to sex, of the people in the questionnaire, 49% male, 51% female.

According to educational status, 10% primary school, 35% high school and 55% university graduate. According to job (occupation) status, 31% student, 24% staff, 4% worker, 26% self-employed, 4% housewife and 11% retired.

According to monthly income, 34% less than 200 million, 19% between 201-400 million, 33% between 401-600 million, 9% between 601-800 million and 5% 800 million above.

Regarding the question " What are your sport activity preferences? ", of the participants, 30% said football, 16% basketball, 6% volleyball, 15% tennis, 26% swimming, 4% track and 9% gymnastic. To the question " Where do you go for your sport activities? " 22% sport room, 53% open area, 6% forest area, 12% seaside and 7% home.

Regarding the question " Do you think it is necessary to have a sport area for your sport activities? ", of the participants, 50% said yes, 50% no. Regarding the question " Do you have time for any sport activity? ", 57% said yes, 43% no.

Regarding the question " Do you think there enough areas for sport activities in your city? ", 12% said yes, 88% no. To the question " Can you easily use the current sport areas? ", 33% said yes, 67% no.

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Table 1: Age Groups Based Distribution of Preference of Sport Activities

Age Groups/ Sport Activities	Football	Basketball	Volleyball	Tennis	Swimming	Track	Gymnastic
18>	1	3	1	-	3	-	1
%	11,1	33,3	-	-	33,3	-	11,1
18-30	13	11	3	5	13	3	3
%	25,5	21,6	5,9	9,8	25,5	5,9	5,9
31-50	13	1	1	4	6	1	3
%	44,8	3,4	3,4	13,8	20,7	3,4	3,4
50<	3	1	1	-	4	-	2
%	27,3	9,1	9,1	-	36,4	-	18,2
Total	30	16	6	9	26	4	9
%	30,0	16,0	6,0	9,0	26,0	4,0	9,0

$\chi^2 = 16,809$ $df = 18$ $\alpha = 0,05$ $P = ,536$

Table 2: Sex Status Based Distribution of Preference of Sport Activities

Sex Status/ Sport Activities	Football	Basketball	Volleyball	Tennis	Swimming	Track	Gymnastic
Male	29	5	2	2	8	3	-
%	59,2	10,2	4,1	4,1	16,3	6,1	-
Female	1	11	4	7	18	1	9
%							
Total	30	16	6	9	26	4	9
%	30,0	16,0	6,0	9,0	26,0	4,0	9,0

$\chi^2 = 45,652$ $df = 6$ $\alpha = 0,05$ $P = ,000$

Table 3: Education Status Based Distribution of Preference of Sport Activities

Education Status/ Sport Activities	Football	Basketball	Volleyball	Tennis	Swimming	Track	Gymnastic
Primary school	6	2	-	-	-	-	2
%	60,0	20,0	-	-	-	-	20,0
High school	12	5	1	2	10	2	3
%	34,3	14,3	2,9	5,7	28,6	5,7	8,6
University	12	9	5	7	16	2	4
%	21,8	16,4	9,1	12,7	29,1	3,6	7,3
Total	30	16	6	9	26	4	9
%	30,0	16,0	6,0	9,0	26,0	4,0	9,0

$\chi^2 = 13,932$ $df = 12$ $\alpha = 0,05$ $P = ,305$

Table 4: Job (occupation) Status Based Distribution of Preference of Sport Activities

Job Status/ Sport Activities	Football	Basketball	Volleyball	Tennis	Swimming	Track	Gymnastic
Student	4	9	1	4	11	1	1
%	12,9	29,0	3,2	12,9	35,5	3,2	3,2
Staff	7	2	4	3	5	1	2
%	29,2	8,3	16,7	12,5	20,8	4,2	8,3
Worker	1	2	-	1	-	-	-
%	25,0	50,0	-	25,0	-	-	-
Self-employment	16	2	1	1	4	1	1
%	61,5	7,7	3,8	3,8	15,4	3,8	3,8
Housewife	-	-	-	-	1	1	2
%	-	-	-	-	25,0	25,0	50,0
Retired	2	1	-	-	5	-	3
%	18,2	9,1	-	-	45,5	-	27,3
Total	30	16	6	9	26	4	9
%	30,0	16,0	6,0	9,0	26,0	4,0	9,0

$\chi^2 = 56,928$ $df = 30$ $\alpha = 0,05$ $P = ,002$

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Table 5: Job (occupation) Status Based Distribution of Current Problems in the Sport Areas

Job Status/ Current Problems	Low Capacity	Poor Quality Equipment	Easily Utilizable	Transportation	Social Foundation
Student	10	1	9	6	5
%	32,3	3,2	29,0	19,4	16,1
Staff	13	1	3	1	6
%	54,2	4,2	12,5	4,2	25,0
Worker	2	-	-	-	2
%	50,0	-	-	-	50,0
Self-employment	8	3	6	1	8
%	30,8	11,5	23,1	3,8	30,8
Housewife	-	-	2	-	2
%	-	-	50,0	-	50,0
Retired	2	-	1	1	7
%	18,2	-	9,1	9,1	63,6
Total	35	5	21	9	30
%	35,0	5,0	21,0	9,0	30,0

$$X^2 = 26,895 \quad df = 20 \quad \alpha = 0,05 \quad P = ,138$$

Table 6: Monthly Income Based Distribution of Preference of Sport Activities

Monthly Income/ Sport Activities	Football	Basketball	Volleyball	Tennis	Swimmin g	Track	Gymnastic
200 Million >	3	10	1	4	10	2	4
%	8,8	29,4	2,9	11,8	29,4	5,9	11,8
201-400 Million	8	2	-	1	5	1	2
%	42,1	10,5	-	5,3	26,3	5,3	10,5
401-600 Million	15	2	3	3	7	-	3
%	45,5	6,1	9,1	9,1	21,2	-	9,1
601-800 Million	2	1	2	1	3	-	-
%	22,2	11,1	22,2	11,1	33,3	-	-
800 Million <	2	1	-	-	1	1	-
%	40,0	20,0	-	-	20,0	20,0	-
Total	30	16	6	9	26	4	9
%	30,0	16,0	6,0	9,0	26,0	4,0	9,0

$$X^2 = 30,462 \quad df = 24 \quad \alpha = 0,05 \quad P = ,170$$

Regarding the question " Would you like to have a sport complex in the city? ", 97% said yes, 3% no. Regarding the question " What kind of facilities should be in a sport complex", 27% football, 17% basketball, 6% volleyball, 10% tennis, 27% swimming, 4% track and 9% gymnastic.

Regarding the question " What do you think is the most important problem in the current sport areas " , 35% low capacity, 5% poor quality equipment, 21% easily utilizable, 9% transportation and 30% social foundation. To the question " Would you go out for sport activities if adequate and appropriate sport areas are made available? ", 99% said yes, 1% no.

Age groups based distribution of preference of sport activities as provided the questionnaire participants was given in Table 1.

According to the results of statistical analysis related with the data in Table 1, the relation between age groups and preference of sport activities were found statistically non-significant ($P > 0.05$).

Sex status based distribution of preference of sport activities as provided the questionnaire participants was given in Table 2.

According to the results of statistical analysis related with the data in Table 2, the relation between sex status and preference of sport activities were found statistically very significant ($P < 0.01$).

Education status based distribution of preference of sport activities as provided the questionnaire participants was given in Table 3.

According to the results of statistical analysis related with the data in table 3, the relation between education status and preference of sport activities were found statistically non-significant ($P > 0.05$).

Job (occupation) status based distribution of preference of sport activity as provided the questionnaire participants was given in Table 4.

According to the results of statistical analysis related with the data in Table 4, the relation between job (occupation) status and sport activities were found statistically significant ($P < 0.05$).

Job (occupation) status based distribution of current problems in the sport areas as provided the questionnaire participants was given in Table 5.

According to the results of statistical analysis related with the data in Table 5, the relation between job (occupation) status and current problems in the sport

areas were found statistically non-significant ($P>0.05$).

Monthly income based distribution of preference of sport activities as provided the questionnaire participants was given in Table 6.

According to the results of statistical analysis related with the data in table 6, the relation between monthly income and sport activities were found statistically non-significant ($P>0.05$).

Conclusion

With the rapid increase in population the migration to cities have caused unplanned and inappropriate urbanization. In this way cities have moved away from nature and green areas have been used for different land use purposes. Therefore, cities have turned into biologically deficient places for human life. This has increased peoples desire towards nature and recreation has become the most important way of satisfying this desire.

Inside the open-green area system, sport areas which are active areas open to public, specially in recent years turned into places where people occupy their leisure times, get off of their stress.

The priority given to recreative aims in leading the youth to sports, carrier importance about the evaluation of sports as an education method at the same time, and in the means of community health. So, in developed countries, the number of people who do sports for this reason, is much more than the ones who do sports for money (Gratton and Taylor, 1985).

In Turkey, in recent years, with the increase of sport facilities and sportsmen number, it is known that facilities, to meet mostly the community's active and passive recreational needs in our cities are not enough. Today, sports became a necessity to take some measures urgently.

The datum taken from the questionnaires show that, the Canakkale city people are sensitive towards different kinds of sportive activities. Thus, the people in the 18-50 age group who form 80% of the participants to the questionnaires, prefer mostly football, basketball and swimming as a sport activity. The important part of the women participants (51%) to the questionnaire, prefer swimming, basketball and gymnasium as a sport activity.

It is understood from the questionnaire results that as the education level increases, the number of people who get busy with different kinds of sport activities increases as well. Just as, while people who graduated from primary school prefer football, high school graduates prefer swimming, football, basketball and tennis. Again, as the education level increases, the characteristics of problems in present sport areas differ. The participants in this group mostly mention about the low capacity, the easily utilizable, and the insufficient social foundations in sport areas.

The people in different job (occupation) groups who participated the questionnaires choose firstly football (30%), next swimming (26%) as a sport activity. Also, it is determined that the participants to mostly all sportive activities are students (32%) and staff (24%).

It is determined that students (32%), staff (24%) and self-employed people are more sensitive towards problems in the present sport areas.

According to questionnaire results, it is seen that as the income level increases, the number of preferred sportive activities decreases. The 53 % of the participants to the questionnaire, prefer open areas to do sports.

At the end of these determinations, the meeting of the needs of the city people whom was observed to be very sensitive towards sportive activities is seen to be an urgent necessarily. With this aim:

- In planning sport areas, the demographic structure of the community such as different age groups, education levels, sexuality should be taken into concern.
- Sport areas should be distributed throughout the city equally.
- Sport areas should be thought together with city parks and other recreation areas.
- As much utilize for people from sport areas as possible should be provided.
- In planning, a place should be given to sport complex as well.
- Arrival to sport areas should be easy.
- In planning sport areas, the collective work of professional disciplines about the topic and the determination of modern planning principles and the transformation of these into application is needed urgently.
- The settlement of the city next to the Canakkale Strait, form an important potential for sportive activities related with water. For different activities such as swimming, underwater sports, the present substructure should be developed.
- There is an important wind motion in all the time of the year for surf, sail and water ski. To get these kinds of sport activities' substructure suitable for national and international organizations, the necessary structural, management and legal arrangements should be made.

References

- Akdogan, G., 1972. Bes Büyük Şehirde Çocuk Oyun Alanlari, Okul Bahçeleri ve Spor Alanlarinin Yeterlilikleri ve Planlama Prensipleri Üzerinde Bir Arastirma. A.Ü. Ziraat Fakültesi Yayinlari: 522, Bilimsel Arastirma ve İncelemeler: 304, Ankara.
- Anonymous, 1998. Çanakkale Tanitim Projesi. Çanakkale Vailigi, Çanakkale.
- Anonymous, 1999. Çanakkale Meteoroloji İstasyonu İklim Raporlari, Çanakkale.
- Anonymous, 2000. Genel Nüfus Sayimi. Nüfusun Sosyal ve Ekonomik Nitelikleri. T.C. Basbakanlik D. İ. E. Matbaasi, Ankara.
- Anonymous, 2001. Çanakkale Gençlik ve Spor İl Müdürlüğü Toplam Sporcu Sayilari Verileri, Çanakkale.

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- Anonymous, 2002a. Çanakkale Milli Eğitim Müdürlüğü Kayıtları, Çanakkale.
- Anonymous, 2002b. Çanakkale Gençlik ve Spor İl Müdürlüğü Spor Alanları Verileri, Çanakkale.
- Appleyard, D., 1981. *Livable Streets*. Berkeley: Uni. of California Press.
- Bakan, K. and G. Konuk, 1987. *Türkiye’de Kentsel Dis Mekanların Düzenlenmesi*, TÜbitak Yapı Arastırma Enstitüsü, Yayın No: U5, 106.
- Bedarida, F. and A. Sutcliffe, 1980. *The Street in The Structure and Life on the City*. J. of Urban History, 6: 379-396.
- Butler, G.D., 1958. *Recreation Areas, Their Design and Equipment*, Second Edition, The Roland Press. Company, New York.
- Chaira, J.D. and Koppelman, L., 1969. *Planning Design Criteria*, New York Van Nostrand Reinhold Co.
- Chapin, S., 1965. *Urban Land Use Planning*, Illinois Univ. Press.
- Davis, J.C., 1986. *Statistics and data analysis in geology*. John wiley and sons, Inc., New York, NY, 646.
- Erdem, Ü., 1989. *Aktif Bir Rekreasyon Biçimi Olarak Spor ve Spor Yerleri Planlama İlkeleri Üzerinde Bir Arastırma*. Türkiye Amatör Spor Kulüpleri Konfederasyonu Yayını, Ankara.
- Ghazze, T.M. A., 1998. *Children’s Use of The Street as a Playground in Abu-Nuseir, Jordan*. *Environment and Behavior*, 30: 799-831.
- Gratton, C. and P. Taylor, 1985. *Sport and Recreation An Economic Analysis*, E. and F.N. Spon Ltd., London-New York.
- Hough, M., 1969. *Principles of Site Dev. for Elementary School*, *Landscape Architecture*, 60: 40.
- Karaküçük, S., 1999. *Rekreasyon-Bos Zamanları Degerlendirme*, Bagirgan Yayımevi, Üçüncü Baskı, Ankara.
- Kesim, G. A., 1996. *Düzce Kenti Açık Yesil Alan Sorunları ve Alınması Gereken Önlemlerin Belirlenmesi Üzerinde Bir Arastırma*. A.İ.B.Ü. Yayınları: 5, Düzce.
- Lewis, H. M., 1957. *Planning The Modern City*, Vol. 1, Chapman Hall Ltd., London.
- Memlük, Y., 1974. *Çevre Düzenleme Acısından Sportif Kuruluşlar ve Ülkemizdeki Uygulamalardan Örnekler*. *Peyzaj Mimarlığı Dergisi*, Yayın No:2, Ankara.
- Michelson, W. and M. Roberts, 1979. *The Child In The City: Changes and Challenges*. Toronto, Canada: Univ. of Toronto Press.
- Nixon, E. J. and E.A. Jewett, 1969. *An Introduction to Physical Education*, Seventh Edition, Toronto.
- Norchis, K., 1994. *The Urban Child*. *Arch. dc Comport J Arch and Behav.*, 10: 343-350.
- Pincombe, P. G., 1969. *An Analysis of the Recreational Activities of Urban Adults: Case Study*, London, Ontario. Master’s Thesis, Univ. of Western Ontario, London.
- Roskam, F., 1982. *Neue Formen in Sport-und Freizeitverhalten*, *Neue Landschaft* 12/1982, 1/1983+2/1983.
- SPSS, 1988. *SPSS/PC+V.2.0. Base Manuel for The IBM PC/XT/AT and PS/2*, Marija and Moruis. SPSS Inc.