

# Perception on Urban Greenery of Children Attending Tennis Schools in Zagreb

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## Summary

Today, more and more children spend their leisure time in front of TV sets, playing computer games or surfing the Internet. Less and less conscious parents send their children off to play, play sports or do extra-curricular activities in the urban landscape spaces.

Apart from parks, which are the green oasis in the expanded urban surroundings there are also sport and recreational centers that are of immense importance for the cityscape as well. In the city of Zagreb users of sports and recreational centers in the outdoors are comprised by athletes of all ages regardless whether they are professionals or amateurs.

A pilot research has been carried out using an anonymous questionnaire specially designed for the purposes of this research on the sample of attendants of a children tennis school in Zagreb. The purpose of the questionnaire is to determine how children attending the tennis school experience the surrounding landscapes. Preferences on greenery in sports and recreation centers were measured with question "Do you like green areas in the sports center?" and the answer that was distinctively significant in relation to other two answers was answer 1. Yes, there is an extreme statistical difference  $X^2 = 42,515$ . Remaining goals concern acquiring information about children's perception and personal experience of the space around them that has an urban horticultural and landscape character.

Response analysis shows that tennis school attendants are more interested in sports programs held in nature and sport centers than in school yard. A higher number of respondents noticed green areas next to the tennis courts and perceived the beauty of the surrounding landscape.

## Key words

urban greenery, landscape influence, children

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## Introduction

Urban greenery in Zagreb can be divided into several categories by their content and form. Some of them are public and private parks, school playgrounds, but also green areas within sports and recreation facilities. In the city of Zagreb there are several municipal sports and recreation centers - SRC Jarun, Lake Bundek, ŠP Mladost, SRC Šalata, SRC Svetice, SRC Maksimirska naselja, TC Maksimir, SRC Grana Klaka, to mention some of them. The stated centers have various sport contents, administrative buildings but also inevitable green areas maintained by employees of the centers. Each of the listed sports and recreation centers offer a wide range of sports activities for every age group and to all citizens of Zagreb.

For the purpose of this paper it is important to point out that lately increasing attention has been directed towards organizing sports and recreational activities for children and youth. The results of various research papers show an increase in hyperkinesia in children and youth as a result of modern lifestyle, respectively expansion of information technology that induces a so called sedentary lifestyle of children and youth. Consequences of hypokinesia (a lack of movement) and increasingly widespread sedentary lifestyle are troublesome, especially because they can be directly linked to an increasing number of obese children and youth that are furthermore linked to cardiovascular and respiratory diseases, spine deformations and an increasing number of school children having flat feet, immune system problems and other health issues (French et al., 2001; Duraković, 1999). One of the reasons for this development is an increasing urbanization and expansion of cities that offer little possibilities for quality communication among children in such environment (Kytä, 2002).

Parents and schools play a major role in involving children in various sports and recreation organizations (Fogelholm et al., 1999). Within schools, beside regular physical education classes, children are members of school sports clubs and/or are involved in various extra-curricular activities which take place in sport facilities of the school. Tennis is just one of the sports activities that take place outdoors in sport facilities of the sports and recreation centers in Zagreb mentioned above. Tennis schools are very popular in Zagreb and there are several reasons for this interest: 1. increased media coverage of tennis events due to good results of Croatian tennis players; 2. no contact sport with less injury occurrence, and 3. individual sport which has a positive influence on developing self-discipline, work habits, concentration, and other personality traits which are important in youth development and finally, if the child has talent it can be a very attractive sport because of the possibilities for earning money, traveling to tournaments, having sponsors etc. Tennis schools take place outdoors and are a good opportunity for children to spend some time in the open air that has a significant positive influence on bone growth, and recent research results show a significant role of outdoor activities in the nature in reducing stress (Hansmann et al., 2007).

This kind of research provides an opportunity to further improve urban green areas according to expectations of particular users' target groups and exactly that is the purpose of organizing urban greenery in a way that it conforms with citi-

zens' use of public green areas and their expectations thereof (Chiesura, 2004).

The goal of this research was to determine the children's perception of green areas surrounding tennis courts and to identify the interaction between teaching about plants and greenery in schools and perceiving the environment while engaging in activities in the nature.

## Materials and methods

Figure 1 show land register entries of sports courts surrounded by green areas. The areas in orange are tennis courts and the ones in green are greenery areas. SRC Svetice has also some other sport facilities besides tennis courts but TC Maksimir has only tennis courts. Access area to the sport facilities is surrounded with maintained greenery and the sports courts themselves are encompassed by various plant materials that enrich the contents of the facility and give the impression of being in the nature.

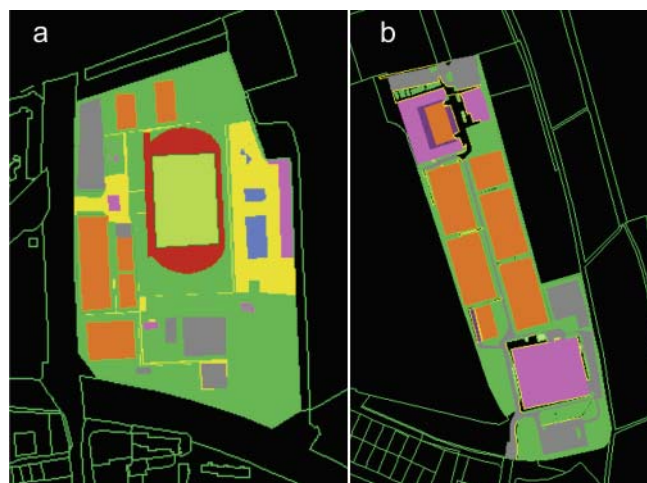


Figure 1. Land register entry of SRC Svetice (a) and TC Maksimir (b)

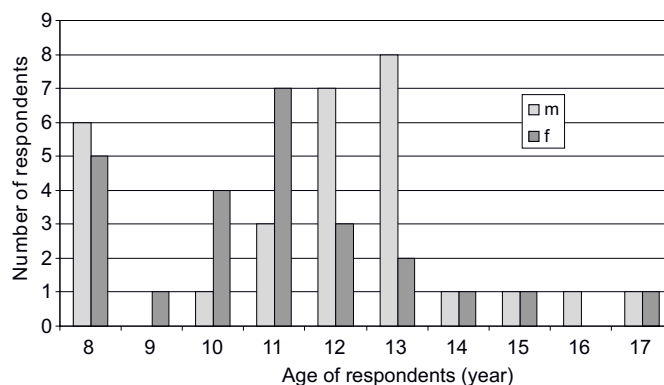


Figure 2. Frequency of sample by age and gender

A survey was conducted on a sample of tennis school attendants. It took place in TC Maksimir and SRC Svetice during spring of 2008. A total of 54 children (age 8 to 17) have answered the questionnaire. The majority of the respondents were between 10 and 13 years old (Figure 2).

The questionnaire was designed for the purpose of this research and it contained five groups of questions, each group consisting of three questions and covering the following topics: respondents' interest in media reports on horticulture, ecology and environment; personal perception of greenery in sports centers; level of engagement in sports and recreation activities, and habit of spending time in nature.

Basic descriptive statistics were calculated from the results.

### Results and discussion

Questions of the survey were divided into groups according to the subject they were covering. Out of each group a question was singled out and the answers to that question were analyzed and compared to each other in order to come to some significant conclusions. From the group Teaching we chose a question "Do you follow media reports on nature and plants and in which media?" The answers offered were: 1. Never; 2. Sometimes, and 3. Often.

Relations between variables shown in Figure 3 were tested by chi square test. Within the population questioned there is a statistically significant difference  $X^2 = 12,485$ . In fact the difference is evident in the answer Often, which indicates that school children have no interest in following reports on nature and plants.

Figure 4 shows basic descriptive statistics on answers to question about tennis school attendants' personal perception of environment. Question „Do you notice greenery around sports areas or tennis courts?“ got an affirmative answer from 85% of the respondents. It is a fact that children who spend some time in sports and recreation centers notice greenery surrounding them. That fact defines a need for urban greenery and its maintenance as well as improvement.

The question from the group Preferences on greenery in sports and recreation centers in which tennis school is being held was "Do you like green areas in the sports center?" Figure 5 shows the distribution of answers: 1. Yes; 2. No, and 3. I don't notice it.

Relations between answers were also tested with chi square test. Within the population questioned there is an extreme statistical difference  $X^2 = 42,515$ . Answer 1. Yes is distinctively significant in relation to other two answers and hereby confirms the previously defined thesis.

Level of engagement in sports, Figure 6, was evaluated with the question „How many hours per week do you engage in sports and recreation activities?“ The answers offered were: 1. I do not engage in them at all; 2. 1 hour per week, and 3. 2 to 3 hours per week and 4. more than 3 hours per week.

The majority of respondents answered that they engage in some kind of sports training 1 hour per week, and only 9% of the respondents train 3 or more hours per week, which is the optimal amount of time for proper development of different anthropological traits in children, especially during adolescence.

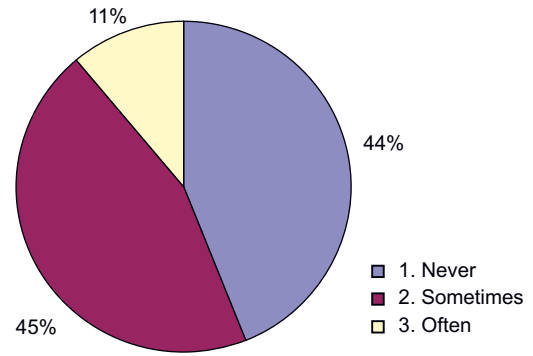


Figure 3. Frequency of answers (percentages) to the question from group "Teaching"

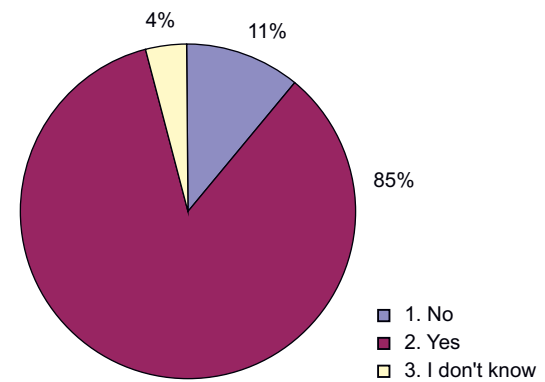


Figure 4. Analysis of answers to the question on personal perception of the greenery in sport centers

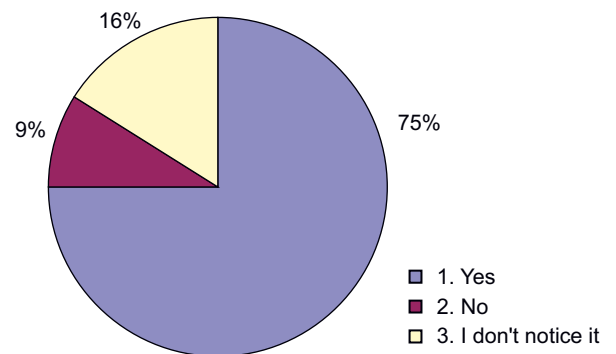


Figure 5. Analysis of answers to the question of preference on greenery

For the purpose of this research we isolated the question on habit of spending time in the nature that was phrased as follows: „Do you spend time in nature with your parents?“ The respondents were offered three answer possibilities: 1. Yes; 2. No, I don't like it, and 3. No, but I would like to.

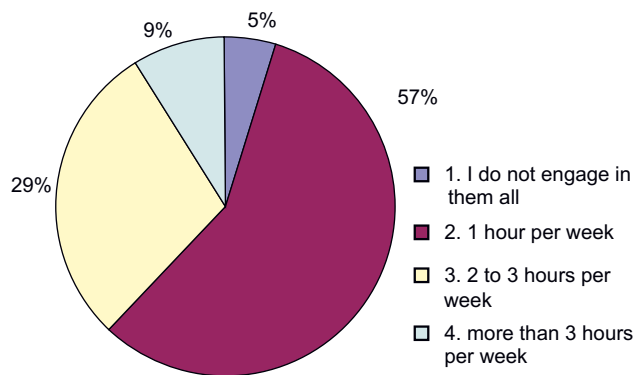


Figure 6. Analysis of answers to the question on the level of respondents' engagement in sports and recreation activities

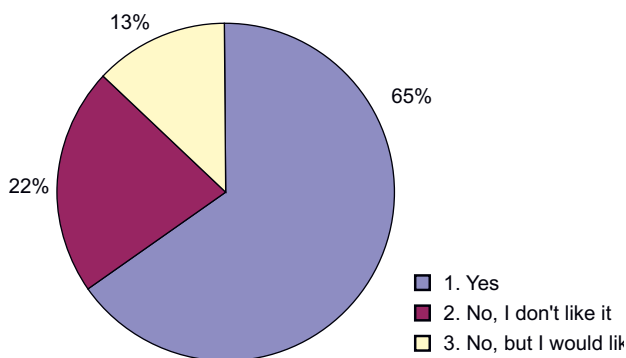


Figure 7. Analysis of answers to the question on the habit of spending time in nature

Figure 7 shows that the majority of respondents answered affirmative to the question which means that the family has a habit of spending time in the nature. In his recently published book Louv (2008) points out that nowadays only a few children climb trees for fun or just to put their abilities to the test no matter if there is a contest going on or if a prize is being promised. The author points out to the fact of the increase in so called autistic isolation in front of digital screens, which can cause atrophy of different sense organs. Excessive exposure can lead to addiction to screens, over-agitation, concentration and sleeping problems, passivity, and slow development in general but particularly slow development of speech. Scientific knowledge points out that those children in development age necessarily need to spend some time in the nature, be outdoors and engage in aerobic activities that increase their oxygen consumption, as well as to play games in which they will train their independence from grownups. Games in the nature significantly contribute to those positive aspects of child development and they should take place customary and

not only as a part of organized sports and recreation activities. This statement shows the big importance of spending time in nature for children but at the same time the role of parents in adopting the habit of engaging in physical activities in nature.

## Conclusion

The analysis of answers in anonymous questionnaire designed particularly for this research reveals various information on lives of primary school children attending tennis schools that have tennis courts surrounded by greenery (TC Maksimir and SRC Svetice). The analysis of answers leads to the following conclusions: 1. Respondents show no interest in media reports on nature. Their knowledge on the subject is gained solely through school education and mandatory courses. 2. Personal perception of greenery while participating in activities in sports and recreation centers was determined. 3. The results of engaging in sports activities support the previous findings referring to insufficient levels of physical activity in children and youth. 4. The answers to the question on habits of spending time in nature are a bit surprising but also promising - 65% of respondents regularly spend time in nature with their parents and perceive it as a positive experience. Based on this experimental research and the results of various scientific studies we can come to the conclusion that the beauty of the nature, or more appropriate, where aesthetic aspects of nature elements, greenery, present in the sport centers is correlated positively with the children perception towards build up environment such as sport centre. Teaching and offering attractive extra-curricular programs with multidisciplinary approach can enhanced the interest of children and youth for nature.

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