

EVALUATION OF ŠIAULIAI CITY GREEN SPACES BY SOCIAL ASPECT

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Abstract. Green spaces play an important role in urban areas because this is an important element of the human living environment. It helps to create a cosy, relaxed, more aesthetic and convenient living conditions. However there is a trend that more and more of the people are concentrated in urban areas. Here they can find a better social prospects and more comfortable lifestyle. Therefore urban environmental quality becomes more important inevitably. It is influenced strongly not only ecological but also social phenomena. There is analyzed the public green spaces in Šiauliai city. Qualitative and quantitative assessment of green areas in the city is based on public opinion surveys. The aim of this research is to find the needs and wishes of residents by improving existing and creating new green areas in the city. Objectives of the study: to conduct a survey of residents in the city and analyze the data.

Keywords: green space, greenery, park, urban environment.

1. Introduction

Greenery is one of the most important elements of the environment which is beneficial to the area climate, improve air quality, retain hazardous materials, have a positive effect on human well-being, a protective and aesthetic functions. Along with the buildings green spaces forms three-dimensional structure of the city, enriches the city image and improves environmental conditions (Jakovlevas-Mateckis, 2008). Plantation plays an important benefit for each city. It is the second (after landscape) the most valued element of the environment (Baubinas *et al.* 2006). People experience tension, stress, live in constant rush because of the fast pace of life. Inevitably increases the need to regain the physical and spiritual strength. It is clear that access to some form of “nature” is a fundamental human need and there is a vitally important part of access to open space. It is undisputed that the city in which to live is healthy and happy is not only the complex of streets, buildings, green spaces but also parks, gardens, water parks and forests (Stauskas 2006). It is therefore important that the system of green areas is formed to help to preserve green space and landscape structure, biodiversity and historical value, maintaining ecological stability and improve people’s living and working environment. Urban green areas (parks, forest parks, squares, gardens and green connections, street stands) are an excellent opportunity to at least partially reduce the negative impact of the urbanization of residential environment quality. It was found that the greenery reduces stress, aggression, can mollify and helps to improve communication between neighbours and strengthen communities’ communication

(Burinskienė and Rudzkienė 2006). Green spaces complements the architecture of the buildings, create more cosiness in the environment what have a positive impact on people. Therefore particular importance for urban people is the larger as can of vegetation-covered area in the city parks and squares. It is especially significant for citizens because the urban environment is full of tension, rush and stress, people lack suitable spaces for recreation. Variety of green areas helps to relax, reduce tension and bring people to the natural environment. Therefore it is inevitably important to analyze qualitative and quantitative parameters of green spaces. Constant supervision, management, refurbishment, adaptation to the needs of society is necessary for green spaces, so we have to focus the community, municipal and investor attention to the development of urban green space and protection (Jakovlevas-Mateckis, 2006). Unfortunately many parks in the city of Šiauliai are just a little or not at all reminiscent of Soviet times neglected legacy, which is not very admired for city population.

2. Materials and methods

Sociological research was carried out to find out the needs and desires of city residents in developing new and enhancing existing green spaces in the city in order to correctly assess the Šiauliai city green areas. A questionnaire was given for Šiauliai city residents in which were asked to respond to the questions of what activities they are engaged in urban green spaces, how often and for what purpose they are visiting there. It was also asked to identify residential area which is the best

managed or to express their views and suggestions on the management of urban greening.

Questionnaire survey of Šiauliai residents' was conducted on 2010 year May-June period. Collected data analysis was performed using programmes by the statistical analysis Microsoft Excel and SPSS (Statistical Package for the Social Science). The study aim was to find out not only as residents of the city assess green areas system but how this assessment depends on the social situation of the population (sex, age, education, social status), residential district, working with landscaping greening and the like also.

Hypotheses about the independence of the two features were tested using chi-squared (χ^2) test. The hypothesis of independence of the variables is rejected, when the estimated statistical significance

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(o_{ij} - n_{i \cdot} n_{\cdot j} / n)^2}{n_{i \cdot} n_{\cdot j} / n} = n \left(\sum_{i=1}^r \sum_{j=1}^c \frac{o_{ij}^2}{n_{i \cdot} n_{\cdot j}} - 1 \right) \quad (1)$$

is greater than χ^2 the distribution of $(r-1)(c-1)$ degrees of freedom the significance level critical value (Čekanavičius ir kt.; 2000). Hypotheses have been checked by the level of significance equal to 0.05. Hypotheses about the independence of the variables was rejected (the differences were considered statistically significant (reliable)), when the program SPSS computed p-value was less than 0.05 ($p < 0.05$).

3. Overview of respondents

The survey respondents' male was 27.71 % and women – 72.29 %. Respondents' average age is 34.84 years (standard deviation – 16.98). Analysing data by age respondents were divided into six groups: 1) 14-18, 2) 19-29 3) 30-39 4) 40-49 5) 50-59, 6) 60 years and older. The percentage distribution by age is shown in Figure 1.

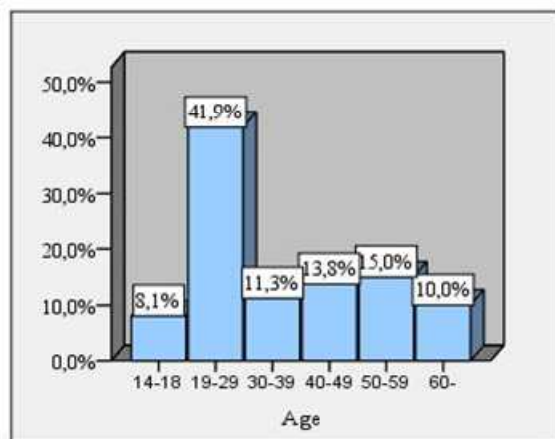


Fig 1. Distribution of respondents by age

Respondents were divided into four groups by the level of education:

1. having higher education,
2. having completed post-secondary education,
3. having secondary education,
4. having completed primary education.

The percentage distribution of respondents by education is shown in Figure 2.

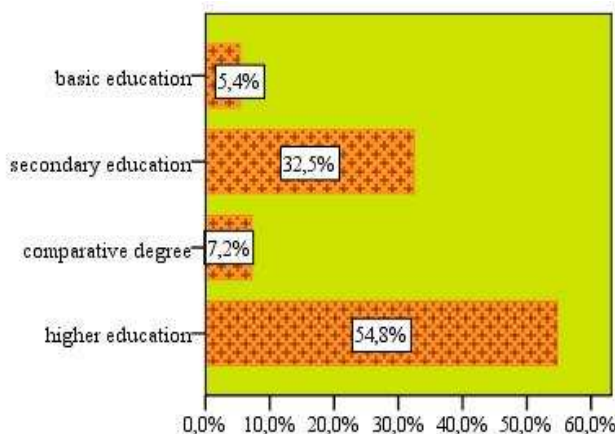


Fig 2. Distribution of respondents by education (%)

Šiauliai city can be divided into 16 districts: Centras, Dainai, Gegužiai, Gytariai, Gubernija, Kuršėnkelis, Lieporiai, Medelynas, Pabaliai, Rėkyva, Salduvė, Verduliai, Verduliukai, Vijoliai, Zokniai and Žaliūkiai. The majority of respondents indicated living in the Centras or Dainai districts (59.26 %).

4. Survey results

Respondents were asked the following questions in order to find out how the residents assess green areas of residential districts of Šiauliai city:

1. How do you think which residential areas are the most abundant of greenery?
2. What is your opinion in which part of the city green areas are the best managed / handled?
3. Do you think is sufficient of green spaces (parks, squares, etc.) in your residential district?

According to interviewees, districts, which are the most abundant of greenery, are as follows: Centras, Salduvė, Rėkyva, Dainiai and Medelynas. Part of the city which is the most abundant of greenery in Šiauliai by the opinion of the respondents is shown in Figure 3.

Respondents considered that the best managed/supervised by the city is Centras. Some of respondents have mentioned Dainai, Medelynas and Rėkyva districts are as the best managed/supervised. The residential districts are shown in Figure 4 which are the best managed/supervised of green areas in Šiauliai.

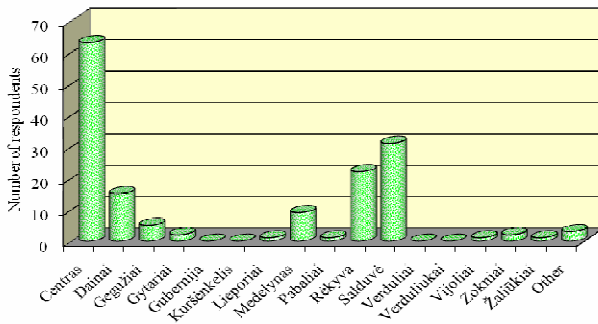


Fig 3. Residential districts which are abundant of greenery

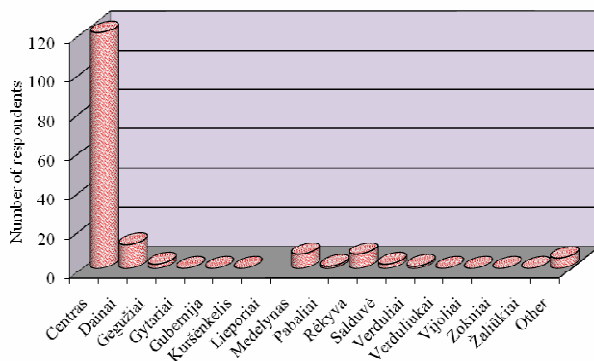


Fig 4. The best management/supervision of green areas in the city

Feedbacks of the residential districts adequacy on the green areas (parks, squares, etc.) have been divided similarly: 44.8 % of respondents indicated that their residential district is sufficient of green space, lack of landscaping - 55.2 %. It was found that the rating of abundance of green areas is dependent on the residential area, social status and age. This suggests that evaluation can be subjective and usually respondents indicated their residential district is the most abundant of plantations and overlooked other districts. It is also noted that respondents of the 19-29 year age group noted that the most abundant of greenery is Centras compared with other age groups disproportionately. It is suggesting that they may be spend in the city centre most of time, so they are not visiting other city residential districts and cannot assess other greenery correctly. Meanwhile, this assessment is distributed more evenly of the youngest and older age group. Those respondents who are not related to the landscape greening, compared with respondents whose activities are related, indicates by analogy disproportionately that the most abundant of greenery is Centras.

The opinion about the best managed/supervised areas is only dependent on education. There it is worth noting that these results were affected by the fact that respondents having college education (which accounted for 7.2 % respondents) thought Centras is managed like other areas. Meanwhile all respondents having basic education believed unanimously the best-managed is central part of the city. The assessment analysis of the

best managed/supervised residential districts was unnoticed statistically significant of their dependence in accordance with other groups. So it can suggest that the residents of Šiauliai city approved the best managed/supervised residential area almost unanimously is Centras meanwhile other residential areas received less attention.

The survey was designed to ascertain which green areas are the most attractive for recreation or leisure. Birch grove of Gegužiai Street, Central Park, the Sundial Square, Rėkyva Park (manor) and the Square of Resurrection Plaza are attractive for recreation and leisure.

Quite often indicating why one or the other green areas are the most attractive for recreation and leisure, were answered that the greenery is the closest to home, well kept and maintained, abundant of greenery. These three main criteria and led selection of population. People are visiting in the city parks, squares usually once a month or only on holidays and events (equally 30.25 % respondents). From one to three times per week, 26.54 % of respondents visit here, while only 5.56 % on a daily basis. People go for a walk with friends in the urban green areas mostly (41.9 %) or with the whole family (27.5 %). Activities are shown in Figure 5 which deals in the city green areas mostly.

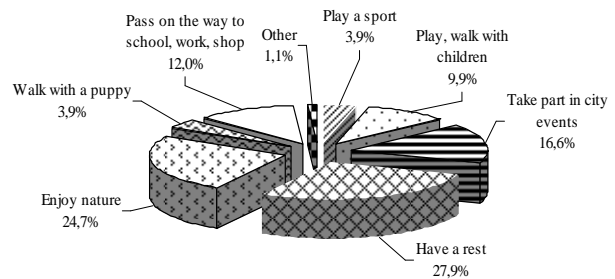


Fig 5. The most common activities in urban green areas

Attractive landscaping for recreation or leisure visits to green areas and reliance on sex, age, place of residence was examined using the criteria χ^2 . It was found the most attractive green areas for the rest or leisure treatment are independent of sex, but depends on age and residential area. Residents feel urban green spaces are lacking for maintenance (42.2 % of respondents), small architecture: bins, benches, lamps, garden furniture, sculptures, fountains, benches, information stands (36.7 %) as well as new plantings and the diversity of it (33, 1 %).

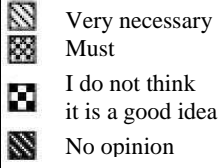
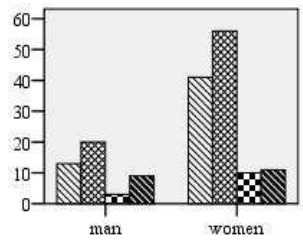
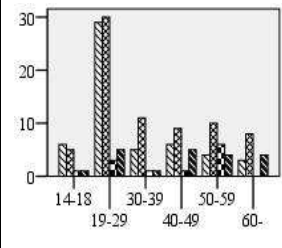
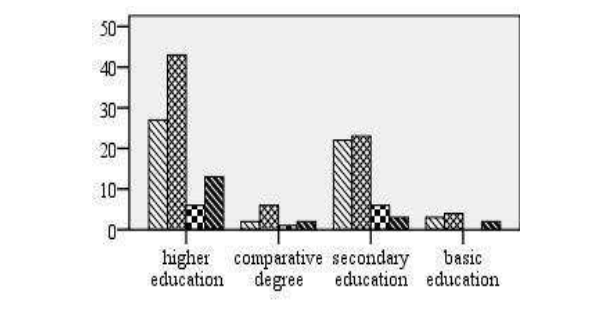
Respondents were asked to answer the following questions in order to find out the citizens opinion on green areas quality:

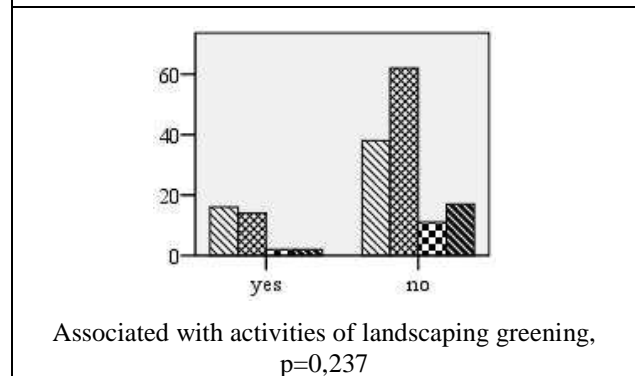
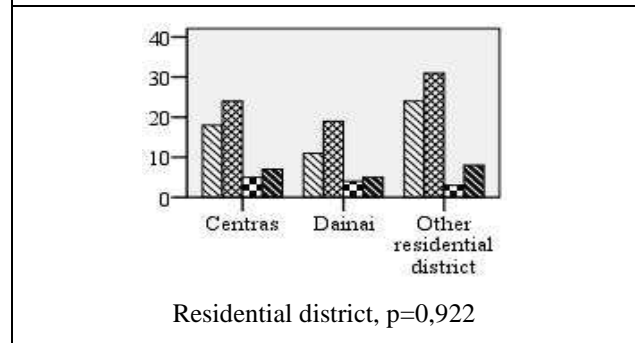
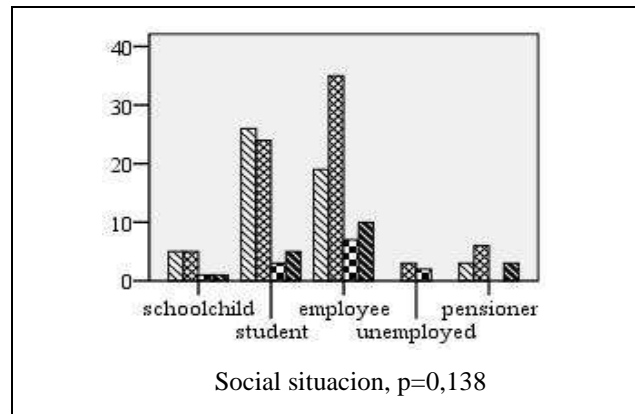
1. Are suitable green areas for an active and relaxing recreation in the city?
2. Is it enough care for greenery of the city?
3. Is it enough diversity in urban planting greenery?

According to respondents, green areas of the city are suitable for active and passive relaxation in Šiauliai. The distribution of answers is neutral, a large part of respondents agree or disagree with this statement. Meanwhile, conflicting opinions prevail on the other two claims. The majority of the respondents more disagree with the statement that care and diversity is sufficient for Šiauliai urban planting. Study was carried out using the criteria χ^2 for dependence in order to find out how assessment of green areas is dependent on sex, age, education, social status, place of residence and the activity associated or not with green areas. The hypothesis of independence of the variables with significance level of 0.05 is rejected three cases from the 18th. We get the answers to questions 1 and 2 are dependent on age and the answer to question 3 on gender.

Respondents were also asked whether it is appropriate to highlight urban identity by using ornamental greening or not. 45.6 % of respondents agree that is necessary to use greenery to highlight the identity of the city, it is especially necessary to do - 33.1 %. Only 8 % of respondents thought that is a bad idea using ornamental plants to highlight the identity of the city. Study was carried out using the criteria for dependence in order to ascertain whether the desire to highlight the identity of the city depends on sex, age, education, social status, place of residence and the activity associated or not with green areas. The results obtained are shown in Table 1.

Table 1. Opinions on the use of ornamental plants to reveal the identity of the city

Is it good idea to reveal the city identity using ornamental plants?	
 <p>Sex, p=0,313</p>	 <p>Age, p=0,037</p>
 <p>Education, p=0,607</p>	



The results indicate approval of the idea to highlight the identity of the city by greenery is dependent on the respondents' age. Younger respondents were more likely to accept this idea. Meanwhile, older residents have been more categorical on this issue and less likely to accept this idea to reveal the city identity using green spaces.

Most of the interviewees did not remain indifferent and agreed to submit their proposals for the supervision of urban green spaces. Interviewees indicated generally the most important for urban plantations is to keep them clean and to allocate sufficient resources to urban green areas supervision; also urban green areas should not be left at the mercy of fate. Respondents would like that to be supervised not only central area of the city but greenery in the outskirts of the city too. The city lacks of flowers, other ornamental plants and tasteful their combinations, different constructions which can attract for recreation and leisure, would help to maintain the cleanliness of the landscaping. Respondents indicate the same citizens as one of the problems why parks are not in good condition because there are people who can cause damage to urban green areas. They offer to educate

people's responsibility and encourage the public to protect green areas, encourage themselves residents to contribute to the supervision of green spaces.

Urban green space system is formed in order to maintain socially and ecologically valuable of natural areas in the landscape, improve the ecological and recreational living environment for the creation of an attractive image of the city. Active public interests encourage restoring green spaces. Therefore the process of green spaces planning in landscaping greening can be facilitated by this clarification of the needs of Šiauliai city population.

5. Conclusions

1. Centras, Salduvė, Rėkyva, Dainiai and Medelynas are the most abundant of plantations of Šiauliai urban areas. The best managed/supervised Šiauliai district is Centras. It was found that the rating of abundance of green areas is dependent on the residential area, social status and age.
2. Often the most abundant of greenery respondents indicate their residential district, at the same time overlooking the other districts. This suggests that evaluation can be subjective.
3. The best supervised Šiauliai district is Centras than other areas. It was approved almost unanimously by the residents of Šiauliai. This could be important note for city environment specialists whose are responsible for urban green areas maintenance.
4. The most attractive for recreation and leisure are green areas, which is closest to the home, maintained and abundant of greenery. This demand is relevant especially in "sleeping districts".
5. Residents feel that urban planting lack of supervision (42.2 % of respondents), small architecture: bins, benches, lamps, garden furniture, sculptures, fountains, benches, information stands (36.7 %) as well as new plantings and their diversity (33, 1 %).

6. Respondents support the idea that Šiauliai city must reveal the identity of the city by greenery. 45.6 % of respondents agree that is necessary to reveal the identity of the city using greenery, that it is especially necessary to do - 33.1 % of respondents. Therefore it is a good idea to create green areas which can reveal past, nowadays and future of the city. Šiauliai green areas could have own unique "face".

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