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Perception of visitors toward urban forests in Skopje: Case Study Park Forest Vodno
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Master Thesis

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MASTER THESIS: Perception of visitors toward urban forests in Skopje: Case study
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Abstract

With the development of both society and the economy, environmental issues have become a more popular topic. In recent decades both the role and perception of urban forests have changed regarding recreational and environmental aspects on both a local and global level. This coupled with urbanization places great importance on how people see and value the forests in an urban and peri-urban setting.

Visitors are not a homogeneous category and hence have different needs and perceptions of urban and peri-urban green spaces.

The study aims to understand the visitors` perception towards Park Forest Vodno recreational use, benefits, preferences of visitors, perception of safety and management activities. In recent decades Park Forest Vodno become important green belt for Skopje. It`s area is 4.573 ha and it is the most visited site for recreation of Skopje citizens.

The method used for the research is semi-structured questionnaire which was conducted on-site, in-person contact. Gathered data were analyzed by SPSS.

The findings give an indication with regard to the intensity of use and the range of statements about benefits of PF, perceptions associated with recreational use, safety and management of this Park Forest. The most frequent visitors are living in average 5,3 km away from the Park and they usually come by walking. Spring is the season when they are coming the most frequent together with their friends. They spent approximately 2,8 hours in walking and recreation.

Relevant results from this research can be used by decision-makers in order to enlarge the recreational activities and to attract visitors who are living farther in the city from one, and to provide them more facilities for visiting this Park Forest during winter and autumn time from the other side.

Key words: Urban forests, Park Forest Vodno, visitors, perception

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Abbreviations and acronyms

FAO	Food and Agriculture Organization
NFAP	National Forest Action Programme
PF	Park Forest
SEE	South Eastern Europe
SPSS	Statistical Package for Social Science
UK	United Kingdom
USDA	United States Department of Agriculture
PE	Public Enterprise

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Skopje, August 2012,
Biljana Stojanova

1. INTRODUCTION

1.1 Definitions

With the development of both society and the economy, environmental issues have become a more popular topic. In recent decades both the role and perception of urban forests have changed regarding recreational and environmental aspects on both a local and global level. This coupled with urbanization places great importance on how people see and value the forests in an urban and peri-urban setting (DESA, 2011).

Urban sites are often harsh, characterized by many pressures and threats, from limited growing space to adverse climatic conditions and air pollution (Konijnendijk et al., 2006, p 93). As a result of urbanization attention is being given to green areas in and around cities. Need for on-site recreation, place for passive and active refreshment from daily stresses is increasing thus, easy accessible nearby green areas in and around cities are good opportunity for recreational and refreshment activities of citizens.

Urban forestry is one of the most used terms in relation to trees in or near the urban environment. An urban forest can be defined by its placement in or near urban areas and by its multi-functional aspects given shade, amenity values, etc. Therefore, urban forestry can be defined as: planning, design, establishment and management of trees and forest stands with amenity values, situated in or near urban areas (COST E12).

Although there is no commonly accepted definition for urban forestry, a working definition may be "an integrated approach to the planting, care and management of trees and forests in and around the city to secure multiple environmental and social benefits for urban dwellers" (Miller, 1988, p.32). Current thinking leans toward considering the urban forest as all trees and related vegetation in and around towns and cities (Bista, 2009).

"Near-town forests have high value because of recreational demand, familiarity of the forest to the people..." (Pearce, 2011, p.292). Most of the values attached to urban forests are non-priced environmental benefits that include e.g. pleasant landscape, ecological balance, pollution control, climatic and physical benefits, peace and quiet and potential recreation opportunities (Robinette, 1972; Grey and Deneke, 1978; Miller, 1997).

Box1: One of the broad definitions used by Strom, 2000
Urban forestry addresses "the land in and around areas of intensive human influence, ranging from small communities to dense urban centres, that is occupied or potentially occupied by trees and associated natural resources."

Urban forestry is a relatively new, multidisciplinary approach in international forest research. It has been defined as "the art, science, and technology of managing trees and forest resources in and around urban community ecosystems for the physiological, sociological, economic and aesthetic benefits trees provide society" (Helms, J.A. (ed.) 1998. The Dictionary of Forestry. Society of American Foresters)

The "national forestry action programme" (NFAP) of South Africa defines urban forestry as an integrated approach, where the planting, care and management of trees in urban and peri-urban areas is undertaken in order to secure economic, environmental and social benefits for urban dwellers (NFAP Review January. 2004)

Urban forestry is a new concept in SEE region. Relatively little has been written about urban forestry, so there is need for more comparative information on what modes of urban forest governance exist and how they work (Bentsen et al., 2010). Definitions of the (peri-) urban forest (hereafter referred to as the 'urban forest' for reasons of simplicity) itself include all the trees and woodland in - and around - urban areas (Lawrence at al., 2011). "Urban Forestry means the planning, establishment, protection, and management of trees and associated plants, individually, in small groups, or under forest conditions within cities, their suburbs, and towns" (Miller, 1997, p.35). USDA Forest Service guidance amplifies this, defining the management of the urban forest as the "planning for and management of a community's forest resources to enhance the quality of life. The process integrates the economic, environmental, political and social values of the community to develop a comprehensive management plan for the Urban Forest" (Miller, 1997, p.31).

Trees and forests are, because of seasonal changes and their size, shape, and colour, the most prominent elements of urban nature. Their benefits and uses range from intangible psychological and aesthetic benefits to amelioration of urban climate and mitigation of air pollution. Historically the main benefits of urban trees and forests relate to health, aesthetic and recreational benefits in industrialized cities. Moreover, green areas have provided people with subsistence by providing food, fodder, fuel, wood and timber for construction. (Tyrväinen et al., 2005)

While these benefits of urban woodland, other tree stands and individual trees are not new they are still insufficiently recognised in urban planning and development processes. There is need to provide more knowledge on the role of urban woodland and trees in improvement of the environment and relate this to their social functions such as fostering mental and physical health.

Table 1: Benefits and uses of urban forests and trees (adapted from Tyrväinen et al, 2005, p.82)

Social benefits	Recreation opportunities, improvement of home and work environments, impacts on physical and mental health. Cultural and historical values of green areas
Aesthetic and cultural benefits	Landscape variation through different colours, textures, forms and densities of plants. Growth of trees, seasonal dynamic and experiencing nature. Defining open spaces, framing and screening views, landscaping buildings
Climatic and physical benefits	Cooling, wind control, impact on urban climate through temperature and humidity control. Air pollution reduction, sound control, glare and reflection reduction, flood prevention and erosion control
Ecological benefits	Biotopes for flora and fauna in urban environment
Economic benefits	Value of market-priced benefits (timber, berries, mushrooms, ect.,), increased property values, tourism

Urban forests, trees and other green spaces are thought to contribute significantly to certain psychophysical and social needs of urban dwellers. Recent studies on citizens' perceptions and behaviour toward urban green areas have shown the complexity and the multidimensional character of the man-nature relationship in the city; inhabitants' use of green spaces appears to be motivated by the need for psychological health with relevant social implications (Sanesi, et al, 2006).

1.2 Problem statement

Visitors are not a homogeneous category and hence have different needs and perceptions of urban and peri-urban green spaces.

In the recent years, South Eastern Europe (SEE) countries are facing with dynamic changes. Transition from socialism to democratic governance, fast growth of the population in the cities, urbanization and industrialization leads to changes in social and cultural lifestyle of citizens. Urbanization is ongoing process throughout the world especially in developing countries. The human population has lived a rural lifestyle through most of history. The world's population is quickly becoming urbanized as people migrate to the cities. In 1950, less than 30% of the world's population lived in cities. This number grew to 47% in the year 2000 (2.8 billion people), and it is expected to grow to 60% by the year 2025 (www.global change.umich.edu).

World-wide urbanization brings with it a wide range of challenges. The demand for land increases, and the energy, resource, water and waste disposal needs of urban populations need to be met. Especially in the developing world, where most mega-cities are located and urbanization is particularly rapid and not necessarily

controlled, providing good living conditions to urban populations is one of the main challenges of our time (www.unhabitat.org). Industrialization and urbanization of the societies has contributed to the shift of natural resource management from economic to more environmental and socio-cultural values (Kennedy and Ward Thomas, 1995; Kennedy et al., 1998).The most obvious dimension of the urbanization processes is the spatial dimension and the changes of urban space when cities and human agglomerations grow (Akerlund et al., 2006), which could be seen either as a densification of the core or as spatial expansion where the urban territory increases (i.e. urban sprawl)(UN Habitat, 2004). This trend turns land into a commodity. Fast growing urban areas are putting pressure on the green spaces which need to serve increasing number of users each day. Forest within cities has become increasingly important since the life in cities change perspective of its citizens toward the forests. Therefore major goals should be dealing with multiple uses of urban forests meeting needs of visitors and citizens.

The main benefits of urban trees and forests relate to health, aesthetic and recreational benefits in industrialized cities. They provide aesthetic enjoyment and create a pleasant environment for different outdoor activities. Woodland can provide an experience of nature in the middle of urban life. In particular, old woodland with big trees may provide urban people with the opportunity to recover from daily stress revive memories and regain confidence. There is also an important educational value of urban forests. Contact with trees, in particular for children, can help people learn about nature and natural processes in an otherwise artificial environment (Tyrväinen et al, 2005).

Skopje, the capital city of Macedonia has a very long history as a main settlement in the Balkan region. Over the years, and influenced by many different and shifting regimes and cultures, the town has turned into a multi-faceted and vibrant city, where a mixture of ethnic and socio-economic groups gives the city a specific character. Population increase in parity with the global urbanization trend and the simultaneous growth and shifts in the economy of the area has put a pressure on the socio-economic and environmental conditions under which the people live. According to last Census (2002), City of Skopje has 506 926 inhabitants and this number rapidly grow. It is estimated that nowadays Skopje has around 1 million citizens.

With the high level of urbanization in Skopje, green areas in and around city are of great importance as recreational settings for urban dwellers. Environmental in and around Skopje has become more and more polluted, life in the City become stressed. It brings working man feel exhausted, nervous thus need clean air, peace and recreation. Hence, parks, green spaces and trees are more than the "lungs of the city" or air pollution cleaners. They affect human health in a variety of ways such as active lifestyles, improved wellbeing, activities and emotional and physical health.

Urban forestry is one of the promising strategies to address the multifaceted problems associated with urbanization. Urban Forestry has found broad following across the world, but its potential for cities and towns in developing countries is unrealized (Konijnendijk et al., 2004). Although FAO has been trying to promote urban forestry in developing world since 1990, lack of information and strategic, coordinated action

has hampered implementation of urban forestry in the developing world's (El Lakany 1999; FAO, 2002). Policymakers are facing tremendous pressures to develop city management strategies that strive for sustainable cities where all inhabitants can enjoy at least a fair quality of life and a reasonably healthy environment. There is need to provide more knowledge on the role of urban woodland and trees in improvement of the environment and relate this to their social functions such as fostering mental and physical health. Participation in sport and recreation activities can reduce stress, anxiety and depression (VicHealth, 1999).

The main objective of Park Forest Vodno is set in the Spatial Plan of the City Skopje and then confirmed by the decision declaring the mountain Vodno as Park Forest. Primary goal of Park Forest Vodno is" to improve the climate, reduce the temperature amplitude, improvement of the environment and production of greater amounts of oxygen" (Special Plan of Cultivation and Protection of Park forest "Vodno", 2007-2016).

Skopje, the capital of the Republic of Macedonia are facing contamination by pollutants that are typical of urban areas and are generated by the interaction of industry, transport and geography where City of Skopje is located. Park Forest Vodno, because of its qualities, and because of its close proximity to the city is of great importance to the citizens of Skopje.

In the fifties this area was established for the erosion purpose. As this problem was solved, Park Forest Vodno becomes the most visited peri-urban area for dwellers of Skopje, especially in the spring and autumn during the weekend days.

It is near a residential area, and only 4 kilometers from the center of the city. Being the largest peri-urban park in Skopje, Park Forest Vodno offers a variety of recreational activities for the communal and neighbourhood needs for all those living near or far from Vodno.

Study or research toward perception of Park Forest Vodno is not done yet, thus this master thesis will provide (answers) information's on what are the visitors perception towards this area which will be helpful for the future development of the area. For many people, direct and indirect contact with nature is an essential aspect of their quality of life. Failure to understand how people experience and value nature can lead to misunderstanding between managers and public. The research will help managers to understand and take into account the less tangible values that people derive from contact with nature. Taken into account above mentioned, it is necessary to know who, why and how use the Park Forest Vodno in order to meet needs of the visitors.

This study is the first in Skopje which explores the visitor's perception of urban forestry in the social and environmental aspects of their lives and can be used as base for further successful research in this field.

1.3 Objectives and research question

Research is focused on visitors perception of Park Forest Vodno in everyday life – how visitors, as direct users of the area, perceive Park Forest Vodno. The goal of research is to explore and describe visitors' opinions on the benefits of urban forest, variations in preferences and perceptions, perception of safety in PF, recreational use of PF, perception and level of satisfaction of maintain and management activities in the Park Forest Vodno to policy makers who may be able to make changes to preserve, and build upon Vodno peri- urban Park Forest.

In order to achieve the goal of the research, *general objective of the study is to understand the perception of visitors toward Park Forest Vodno,* though setting overall research question:

- How visitors perceive Park Forest Vodno?

Regarding the research question the following sub-questions have been defined for better clarification, answering and understanding of research question:

- What is the profile of visitors?
- How do visitors use Park Forest?
- How do visitors perceive benefits of PF Vodno?
- What is the perception of safety in PF Vodno?
- How do visitors perceive management of PF; and are they satisfied with it?

2. Theoretical framework

In recent years, urban forest managers have been caught between the increasing demand for aesthetic and recreational use of urban forest resources and the decreasing budgets for managing those resources. This dilemma has created a need for more efficient ways to manage urban forests for the benefit of urban residents. In response to this need, the social science and design disciplines have undertaken studies of the human perceptual and behavioural aspects of the urban forest (Schroeder, 1989)

Perceptions and preferences from urban forests by Schroeder (1989) are derived into following aspects:

-Benefits of urban forest vegetation

-Preferences and perceptions

-Safety

-Variation in perceptions and preferences

-Recreational use of urban forests

-Applications of research

Figure 1. Aspects of perceptions and preferences from urban forestry (Modified by author)
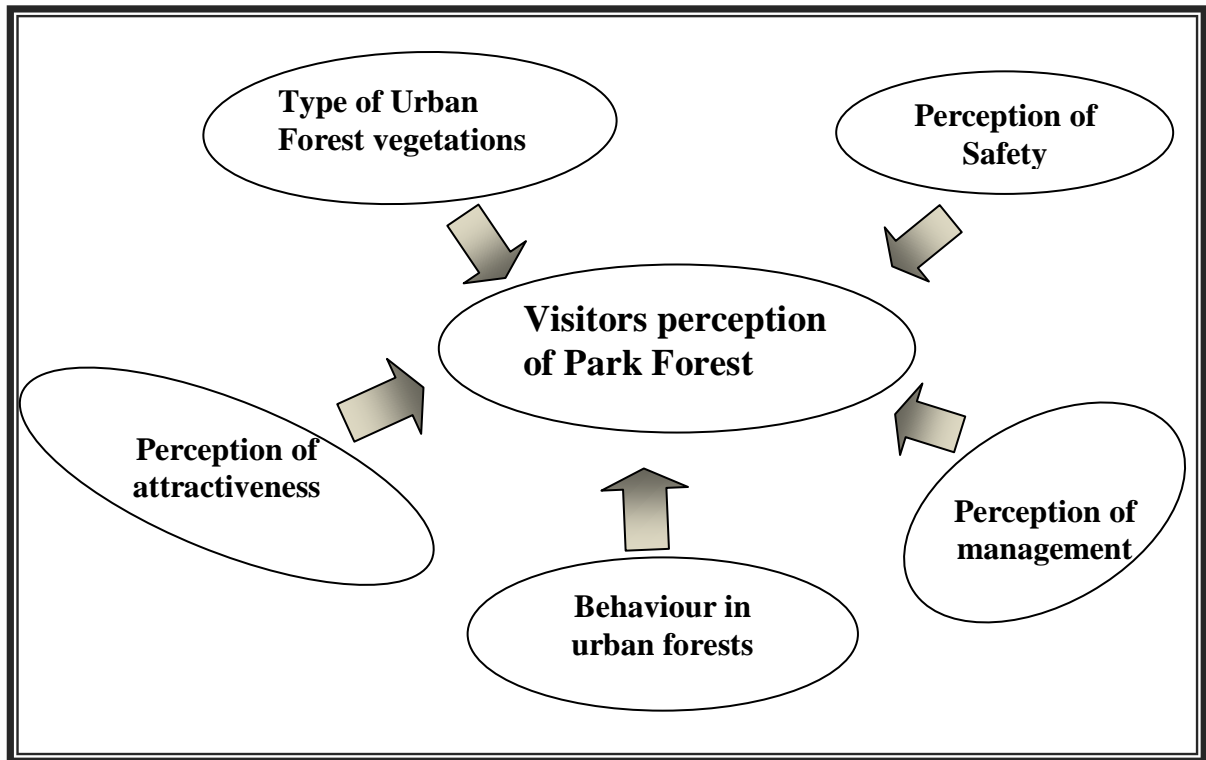
Benefits of urban forest: Vegetation can have beneficial effects on people's moods and emotional states. The perceived benefits of urban forests generally fall into two main categories: benefits involving aesthetic enjoyment and relaxation; and benefits involving sports and social contact (Hayward, D.G. and W.H. Weitzer. 1984; Ulrich, R.S. and D.L. Addoms. 1981). Coles and Bussey (1999) recorded that 80% of visitors felt "close to nature", "relaxed" and/or "happy" when in the forest. Very few in their study felt anxious or insecure although Schmithusen and Wild-Eck (2001) reported figures as high as 15% of all visitors feeling "unsafe" in other forests.

Preferences: Environmental perception studies seek to identify the characteristics and features that enhance the perceived quality of urban forests. In general, natural elements such as trees and water in landscapes are highly preferred over artificial elements. Trees and forested areas, water, good maintenance, and peace and quiet were among the most preferred features of urban parks and forests in several studies. The most widely preferred kind of park environment seems to be a well-maintained open stand of large trees with evenly mowed grass and water. Features that detract from the attractiveness of a park include manufactured objects (e.g. buildings, fences, and parking lots), poor condition of vegetation, urban surroundings adjoining the park, litter, graffiti, crowding, and large, monotonous fields. Either too many or too few trees in a park can reduce visual preference. Sounds that are incongruous with the character of the setting can also make a forest or park less attractive.

Safety: The probability of being a victim of crime is higher in cities than in non-urban areas. Despite large variations between regions, countries and cities, recent years show a widespread increase in urban violence worldwide, including homicide, assault, rape, sexual abuse and domestic violence. (Un-habitat, 2004, p.4)

Some urban parks, according to Wekerle and Whitzman (1995) have become 'hot spots' of crime and other criminal activities like drug dealing, bashing and sexual violence. Crime and social conflict are a serious concern in some urban parks and forests. "Many park users are unwilling to use areas of a park they perceive as unsafe and many potential park users are deterred from using parks at all due to fears for personal safety" (Marcus and Francis, 1998). Social conflict includes a wide range of behaviours, from violent crimes to "nonviolent" offenses such as drug use, to behaviours that, although not illegal, may be threatening or offensive to other users (Chubb and Westover, 1980).

Variation in preferences: Not everyone likes the same kind of places. There are variations in urbanites' perceptions of urban forest settings, especially with respect to the degree of naturalness versus development. Schroeder and Anderson (1984) found that most of the participants in their research thought that natural-appearing parks with dense vegetation were the most attractive, but a few people preferred highly developed, "manicured" parks.

Recreation use: People's preferences for urban forest environments are expressed in their choices of which sites to visit and how to use those sites. Konijnendijk's study (1999) showed that urban forests are highly valued and appreciated for their recreational potential. Some recreational activities seem to be popular in almost all urban forests, such as going for a short walk, jogging and walking the dog. These mostly concern daily, short-time use by people living nearby. In Britain, for example, urban forests often include golf courses, while cycling is very popular in the Netherlands and Denmark. In the Nordic and Eastern European countries in particular, skiing is a main use in winter, and the collection of berries and mushrooms in summer and autumn. In former East-Berlin, overnight stays in tents in the forests used to be very popular and is still practised, even after the reunification of the city and being illegal. Nature-oriented forms of recreation seem to be preferred, although this trend is stronger in some countries than in others. Another general development is the emergence of more active forms of recreational use, such as mountain biking (Hunter, 2003).

Applications of research: Research on urban forests is useful only to the extent that it can contribute to the planning and management of vegetation in cities. In this section, research can provide information on how visitors perceive the importance of management objectives and the performance of the manager in meeting those objectives. Research will be used to document the importance of Park Forest to citizens, what services should be provided, and to reveal sources of dissatisfaction with tree management programs.

3. Methodology

When social research is conducted, certain methods and methodologies for producing scientifically based results have to be applied. The method used for conducting the research is quantitative data social research.

3.1 Research approach

Applied research is conducted for the purpose of the study. In order to explore and describe social and aesthetic benefits of urban forests and discuss how visitors' perceive these benefits, Park Forest Vodno is used as a case study site. Aim of the case study is to gain insight in perception, preferences and demands/needs of actual Park Forest visitors as well as their habits and motivation related to visiting Park Forest (e.g. sports, relaxation, etc.). Visitors with minimum age of 18 are chosen as actual, direct users of the area. Deductive approach is applied beginning with abstract thinking, logically connecting ideas in theory to concrete evidence and testing the ideas against evidence.

Surveys have been conducted using on-site, in-person contact by the `next-to-pass' technique (Segeren and Visschedijk, 1997), the sequential interview of a person or a group passing by. If a group was approached, the researcher attempted to make eye contact and responded to those who made eye contact. Interviews are executed at one predetermined location *Sredno Vodno* at the entrance/exit path used by all recreation types. Technique is chosen because of statistical integrity (official even unofficial data regarding number of area visits do not exist, thus relevant sample size cannot be defined). Total number of approached visitors is 157, 113 respondents participated, 27 did not want to be interviewed and 17 visitors are repeated (had already been interviewed in the selected days).

3.2 Study area

Mountain Vodno is important green belt for the city of Skopje. It is located southwest of Skopje Valley and extends east-west direction of 12km and a width of 5.5km. It covers a total area of 4.573ha; natural forests cover an area of 1410ha. Mountain Vodno is a low mountain (1.068 m a.s) (Programme for arranging of Park Forest Vodno, 2010).
In environmental aspects, mountain Vodno is important in terms of:

- Soil and water conservation and protection of torrents
- Contribution to biodiversity
- Regulation of local climate
- Providing Clean Air
- Noise barrier
- Social and economic values of water
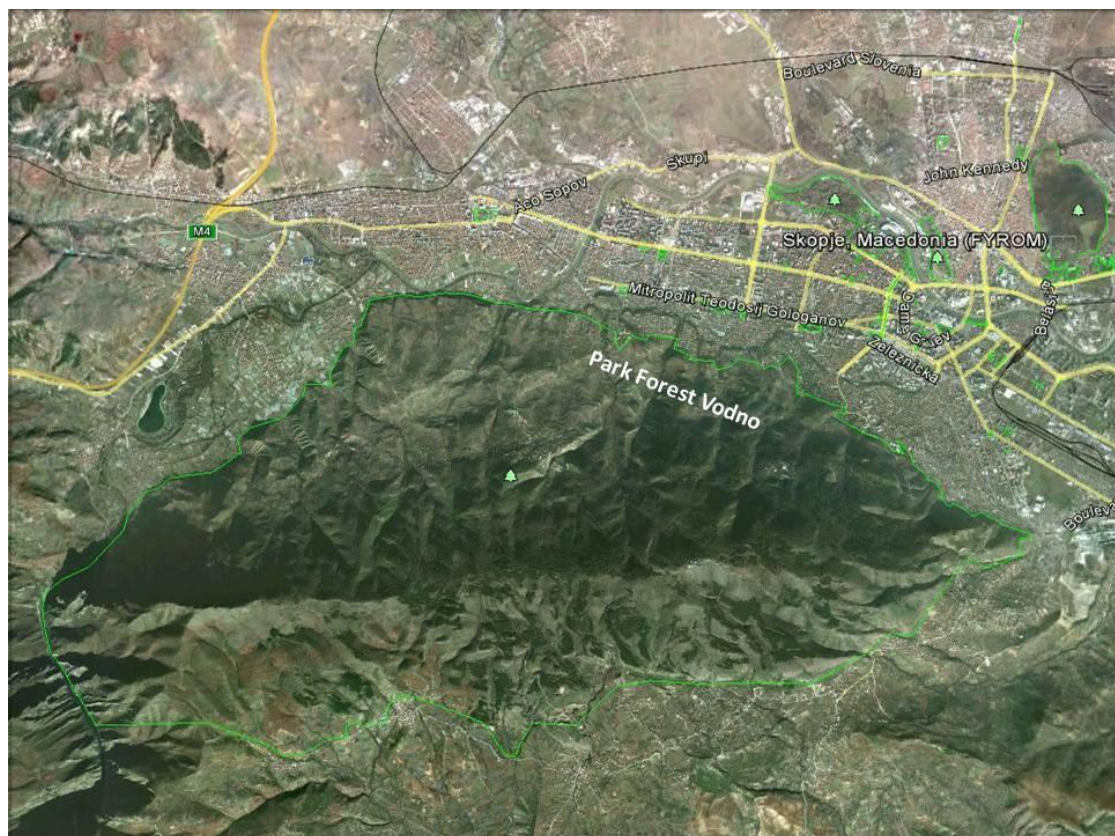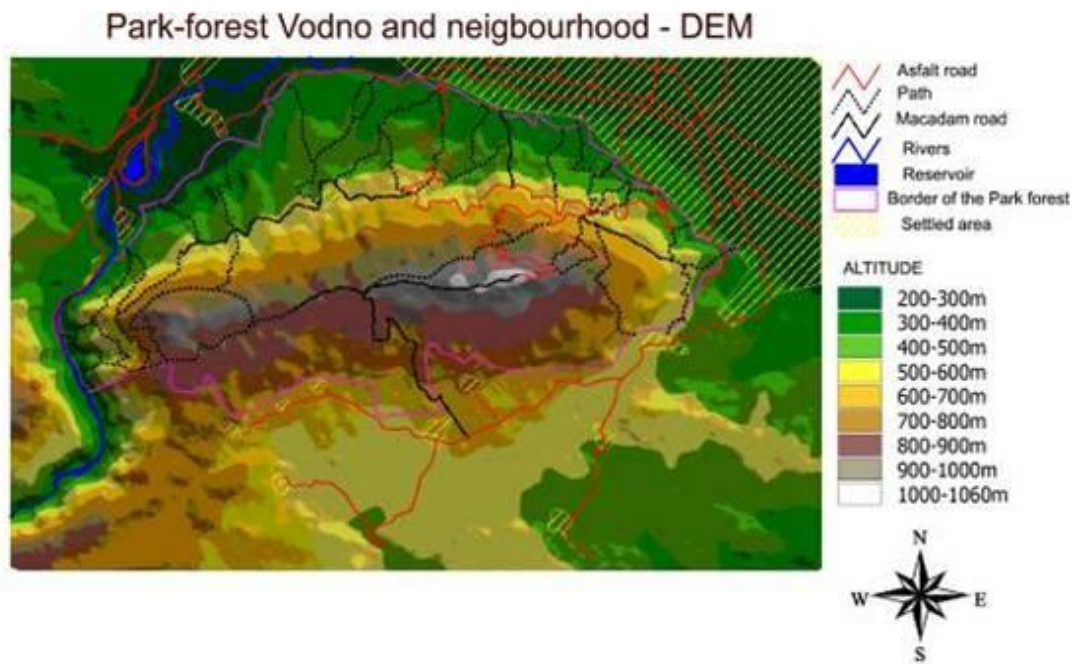
Map of Skopje city and Prak Forest Vodno (Source Google earth)

Development, regulation and use of area of mountain Vodno is closely associated with the development of the City and its basic functions. Because of natural attractiveness, climate and vegetation characteristics, good traffic connections and infrastructure, mountain Vodno is a recreational and picnic area of Skopje citizens.

In order to preserve the values of the forest complex, the Assembly of the City of Skopje proclaimed northern slopes of Mountain Vodno as Park Forest (Official Gazette of City Skopje no. 28/76).

The terrain of the site is steep, making it less accessible, but attractive for sports activities, hiking, and mountaineering. According to the annual programs for PF Vodno from 2008 till 2011 there are placed 9 wooden viewpoints, 27 wooden tables and benches, 88 litter bins and 3 children playgrounds in order to increase the content that will provide better conditions and leisure for visitors.

Sredno Vodno, May 2012 (picture by B. Stojanova)

Sredno Vodno, May 2012 (photo by B. Stojanova)   *Vidikovec, May 2012 (photo by B. Stojanova)*

3.3 Data collection

The study uses primary sources of information. Data was collected by means of a questionnaire, administered through personal interview in the period of spring (May) 2012, during the two-week period, in the weekend days (in Saturdays) as well as during the week (in Monday and Thursday) between 9:00 and 18:00 h. According to Special Plan of Cultivation and Protection of Park Forest Vodno, area is most visited during the spring season and during the weekend days. Thus, May is selected as most visited month and days and hours of data collection have been selected with the purpose of covering working days, holidays, and different parts of a day.

Short face-to-face survey (Neuman, 2006; De Vaus, 2002) was designed in order to make data collection as easy as possible and not to burden visitors. Structured questionnaire consisted of pre-coded, scaled and open-ended questions were conducted to determine the visitors' perception of urban forestry. Questionnaire was separated in six parts: recreation, benefits, preferences, safety, management and socio-demographic part. It is composed of 29 questions addressing questions related to visitors' preferences, reasons for visiting, how they use the area, satisfaction with current management of Park Forest as well as participation in decision making and/or maintenance of Park Forest and possible conflicts with other users. The questionnaire was tested preliminary on 7 people. Survey was conducted by four people, divided in two groups, first group was on site from 9.00 till 14.00h, second group was on-site from 14.00- 18.00h. Researcher was part of the groups.

3.4 Data analysis

Semi structured questionnaire had 29 questions and each of the questions was analyzed separately. The data collected during the field work were identified into different variables as required by the study objectives. Nonparametric statistical tests (Siegel and Castellan, 1988) are used. Data basis was prepared in Microsoft Office Excel 2007. For all statistical analyses SPSS was used (SPSS.18.0, 2009). Descriptive statistics was providing an overview of research outcomes. Data was analysed quantitatively using frequencies, percentages, mean, Chi-square test and Spearman correlation test and was logically interpreted using tables, charts, and graphs as can be seen in chapter 4.

3.5 Study limitations

One of the principal challenges of social research is that the individuals who are being studied can become aware of the researcher's expectations or goals, which can alter their behaviour. On the other hand, face-to-face survey allows researchers a high degree of control over the data collection process and environment (Doyle,J., available at: wpi.edu). Since the interviewer elicited and recorded the data, the problems of missing data, ambiguous markings, and illegible handwriting are eliminated.

When respondent found a question to be confusing or ambiguous, the interviewer clarified it. Similarly, the respondent was asked to clarify answers that the interviewer cannot interpret. Thus, respondents were unintentionally influenced to answer in a particular way.

In open-ended questions, participants gave responses in their own words. Survey was conducted on Macedonian language than responses of open-ended questions were translated. Answers need to be coded or grouped to provide level of summary. During the analysis of obtained responses, results were translated into working language (English) and summarized, thus the accuracy of some statements was lost.

Survey was done in one season- spring, in two - week period in May 2012, in six days, two weekend day and four during the week. As results could be generalized, survey should be done in all seasons because number of visits varies during the different hours of the day, day of week and season of the year.

In addition, variation of visits can be attributed to the weather which was another limitation factor during the survey. In all day of data gathering it was raining, thus expected number of visitors was smaller which leads to smaller sample size.

4. Results

In the survey conducted on Sredno Vodno 113 interviewees were participating. The questionnaire was consisted of six parts. Data was analysed by SPSS and logically are interpreted in tables, chart and figures.

4.1 Socio-demographic data

The research involved 113 respondents, of which 65.5% male and 34.5% female (Figure 2). Most of respondents were in age group of 18-30 years (56.6%), 28.3% in the group of 31-40 years, 6.2% in the group of 41-50 years and 8.8% are older than 50 years (Chart 1).

Figure 2. Gender distribution
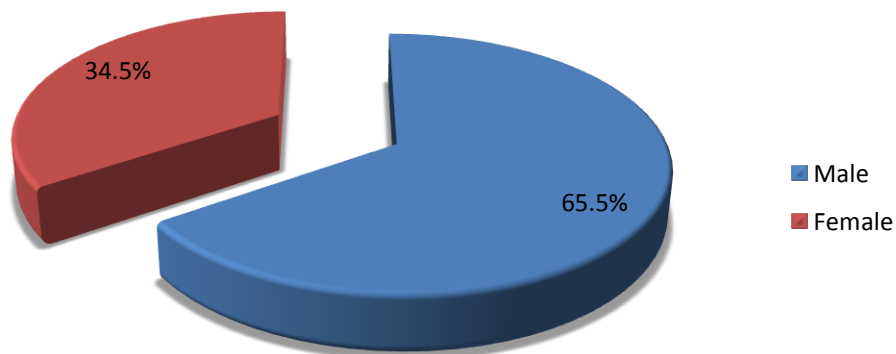
(Question No.25, Gender)

Chart 1. Age groups
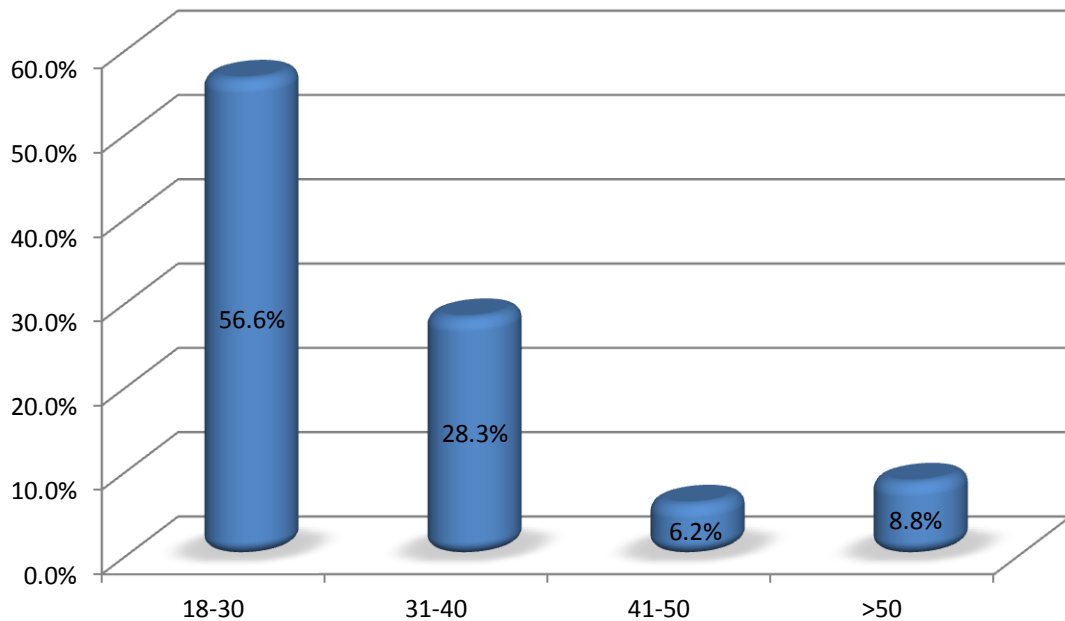
(Question No.26, How old are you?)

Analysis showed that 32.7% of respondents are working in private sector, 23.9% are students, 17.7% are working in public administration, 15% business owners, 6.2% are unemployed and 4.4% are retired (Chart 2). More than half of respondents (60.4%) have a university degree, 18.2% have more than faculty level and the same percentage are with upper secondary school, and 2.7% have lower secondary school and on one have primary school level (Chart 3).

Chart 2. Presentation of occupation
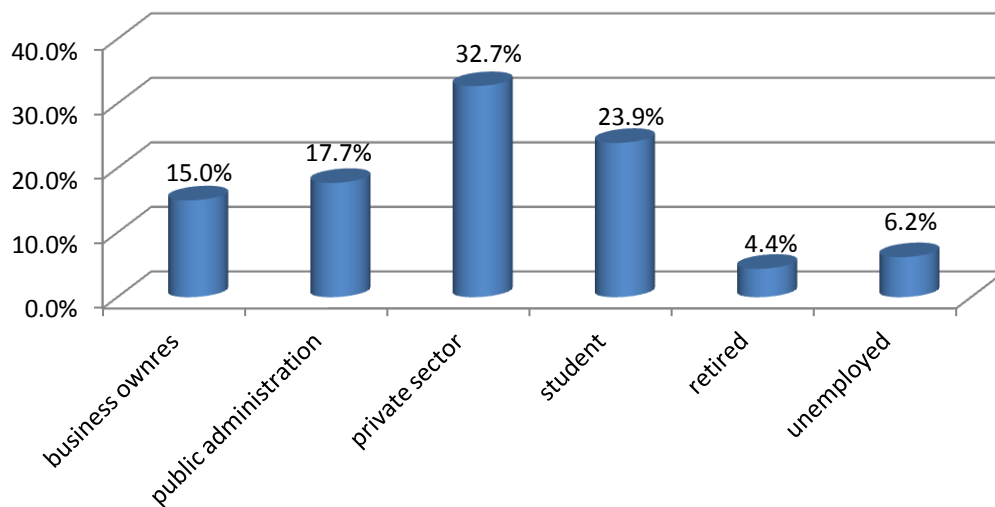
(Question No.27, Occupation)

Chart 3. Educational level
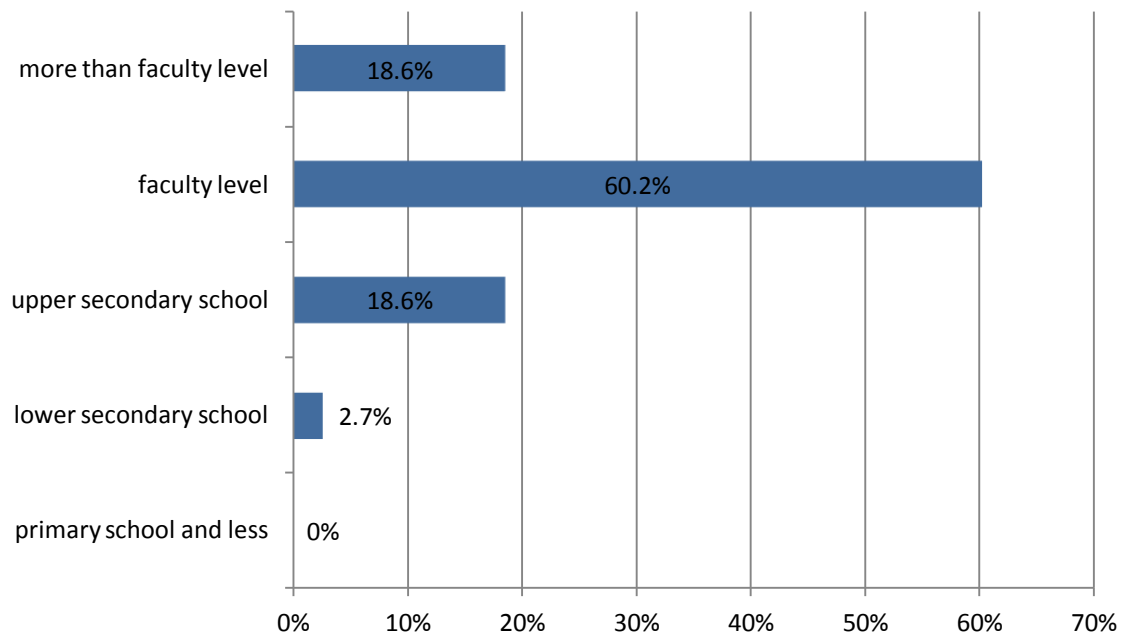
(Question No.28, What is your educational level?)

Kisela Voda (25.7%) and Karpos (23.9%) are settlements where most of respondents live, 16.8% living in Centar, 11.5% living in Gazi Baba and others are living in Gorce Perov (5.3%), Butel (3.5%) and Cair (207%) (Chart 4).

Chart 4. Settlements where visitors live
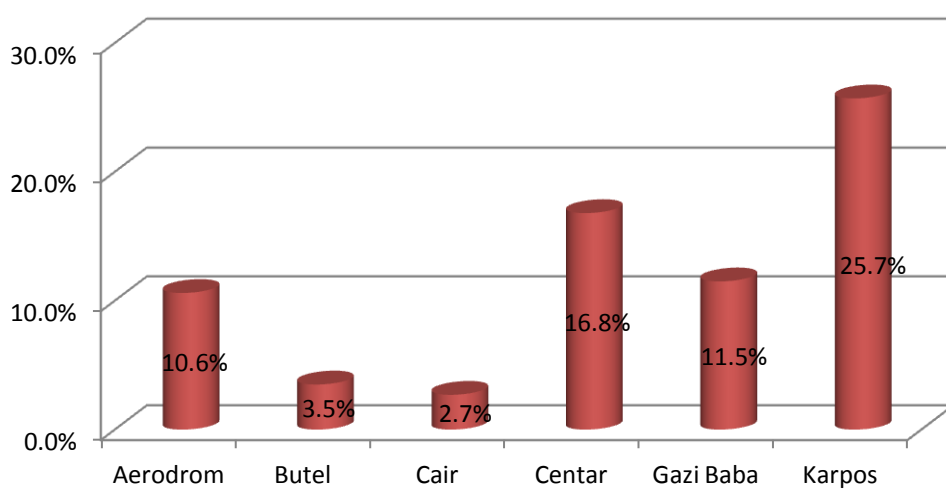
(Question No.29, In which settlement you live?)

Table 2. Visitors' general background

|		No. of responses	Percentage
Gender	Male	74	65.5 %
	Female	39	34.5 %
Age groups	18-30	64	56.6 %
	31-40	32	28.3 %
	41-50	7	6.2 %
	> 50	10	8.8 %
Occupation	Business owner	17	15 %
	Pub. Administer.	20	17.7 %
	Private sec.	37	32.7 %
	Student	27	23.9 %
	Retired	5	4.4 %
	Unemployed	7	6.2 %
Educational level	More than faculty	21	18.6 %
	Faculty	68	60.2 %
	Upper secondary	21	18.6 %
	Lower secondary	3	2.7 %

4.2 Recreational aspects

In the first set of questions respondents gave answers to the questions about frequencies of their visits of the Park Forest during each season, how far is Park Forest Vodno from their place of living, which transport they use, with whom the most often they go there, how much time approximately they spent in the Park Forest and which places they usually visit.

Analyzing the issue of distance showed that respondents come from destinations that ranged from 1 to 16 kilometres away from the Park Forest (Table 3). The mean value is 5.3 kilometres. Most of the respondents (41.6%) coming from the distance from 1 to 3 kilometres from their home, 23.9% form 3-6 km., 18.7% from the distance between 6 and 9 km., 11.5% from 9-12 km., and only 4.5% of respondents coming from the distance bigger than 12 kilometres (Chart 5).

Table 3. Distance from PF Vodno

Distance	Minimum	Maximum	Mean
Kilometre	1.0	16.0	5.332

(*Question 1. How far is your home from Park Forest Vodno?*)

Chart 5. Distance from Park Forest Vodno
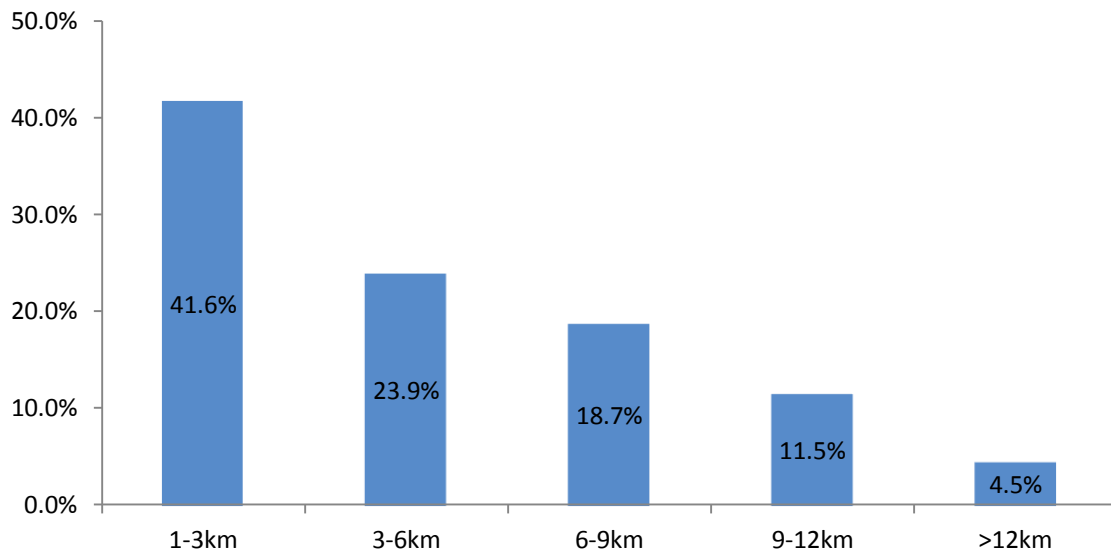
Test of frequencies about the transportation which is used for reaching the Park Forest showed that 47.3% of respondents reach it by walking, 28% by bike and 24.7% by car. No one is coming by public transportation (Chart 6). Chi-square test showed that there is no statistically significant difference in which transportation means respondents use to reach the Park Forest (Chi-square = 0.427, df=1, p=0.514).

Chart 6. Transportation mean for reaching PF Vodno
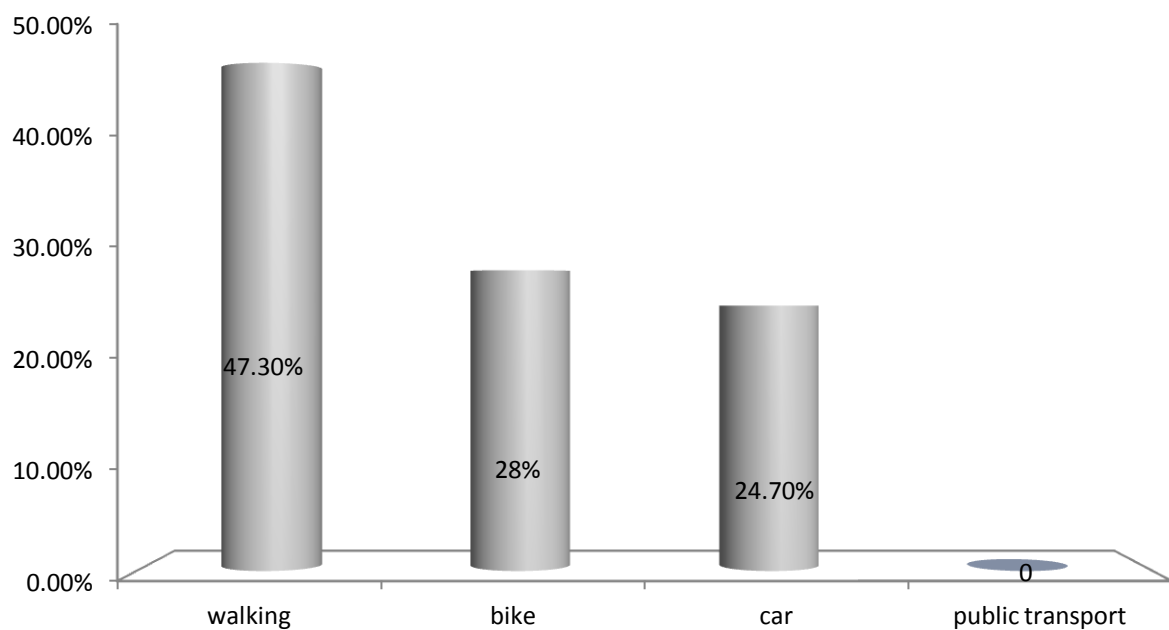
(Question No.2 How do you reach Park Forest Vodno?)

When visitors were asked how often during each season they come in a Park Forest, 68 (or 60.1%) of them responded that there are coming very rare or rare (1-5 times in the month) in winter while 3.5% said that they are coming very often (everyday). In spring (51.3%) and autumn (44.2%) they are coming often. 9.7% are coming very rare in spring and 21.2% in autumn are coming very rare (Chart 7; Table 4). Also there is statistically significant difference in visiting rarely or very rarely versus often and very often in winter (Chi-square=14.735, df=1, p=0.000), spring (Chi-square=6.451, df=1, p=0.011) and autumn (Chi-square=4.776, df=1, p=0.029). In summer time there is no statistically significant difference (Chi-square=3.195, df=1, p=0.074).

Chart 7. Seasonal visit
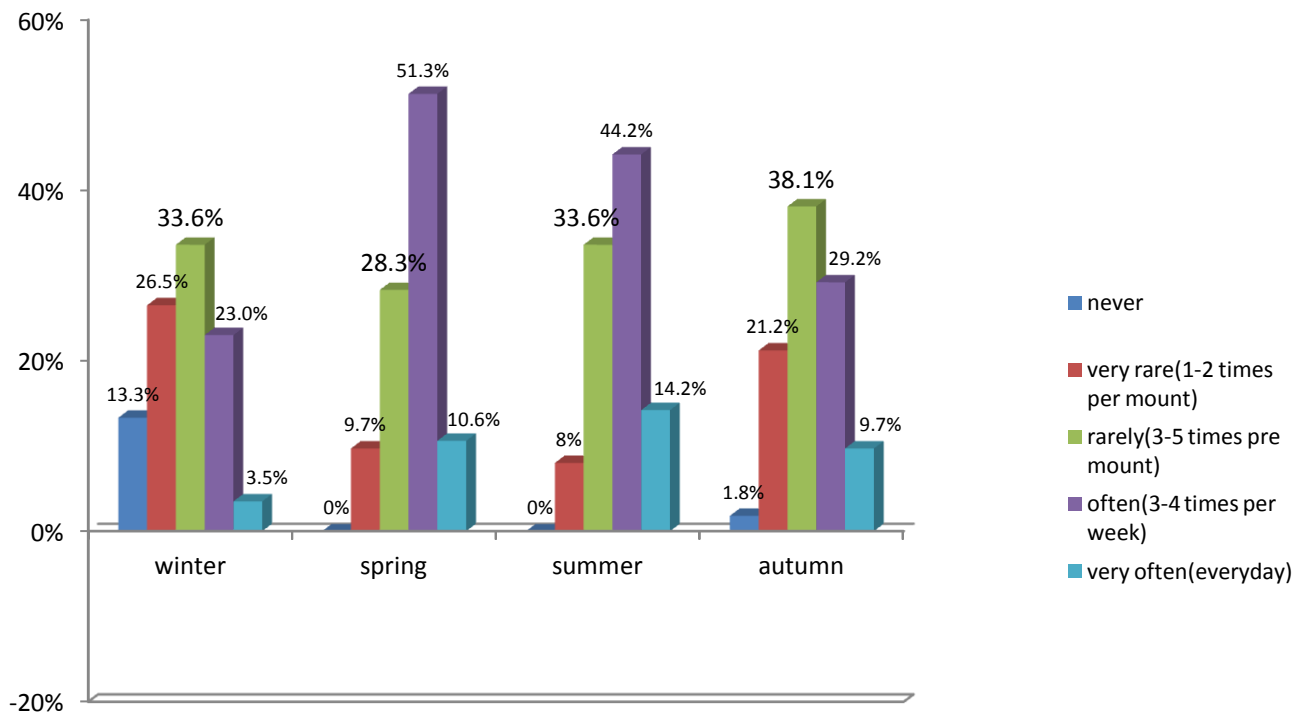
(Question No.3, How often during each season do you visit PF Vodno?)

Table 4. Frequency of seasonal visits

Seasonal visit	Winter (No. of visits)	Spring (No. of visits)	Summer (No. of visits)	Autumn (No. of visits)
Never	15	0	0	2
Very rare (1-2 times per mount)	30	11	9	24
Rarely (3-5 times per mount)	38	32	38	43
Often (3-4 times per week)	26	58	50	33
Very often (everyday)	4	12	16	11
Total respondents	*113*	*113*	*113*	*113*

Most of the respondents 49.7% come with their friends, 14.6% comes alone, 12.9% with their partners, 11.7% with family, 9.4% comes with colleagues and 1.8% comes with neighbours (Chart 8). Chi-square test showed that there is no statistically significant difference with whom they are visiting the area (Chi-square=0.006, df=1, p=0.939).

Chart 8. With whom visitors come in PF the most often
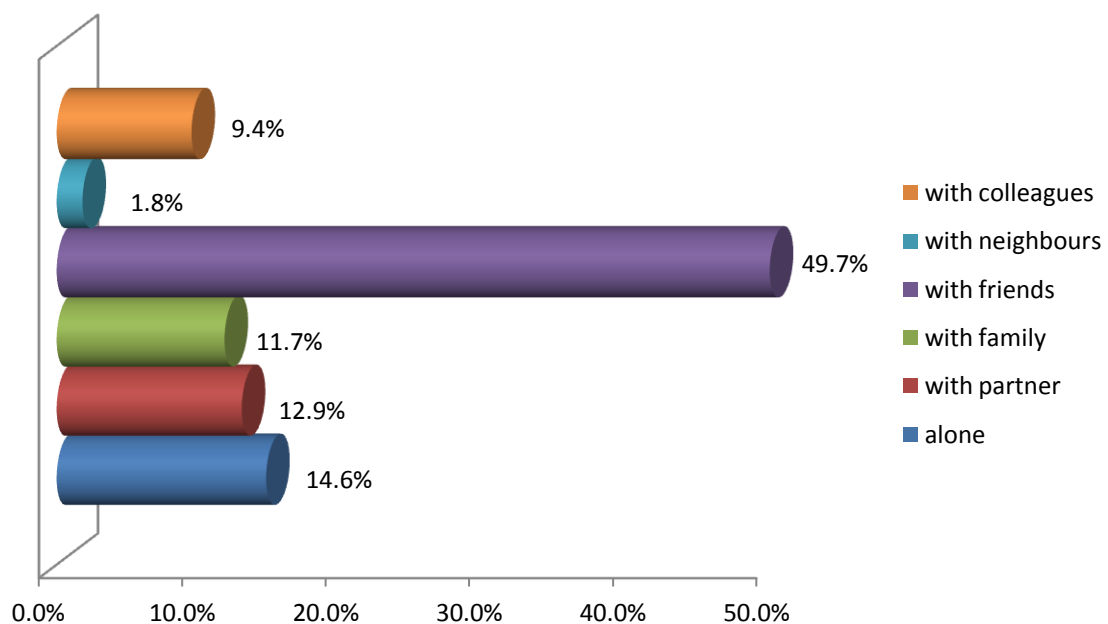
(Question No.4 With whom you come here most often?)

Average time spent in Park Forest Vodno is 2.8 hours. Minimum time spent there is 1 hour and the maximum is 8 hours (Table 5) or 75.3% of respondents spent from 1 to 3 hours in average in the Park Forest, 22.9% spent from 3 to 6 hours and 1.8% spent more than 6 hours in the Park Forest (Table 6).

Table 5. Average time spent in PF Vodno

Average time per visit	Minimum	Maximum	Mean
Hours	1	8	2.810

(Question No.5 How much time per visit in average do you spend in PF Vodno?)

Table 6. Average time spent in PF Vodno *(Question 5)*

Average time per visit (in hours)	Percentage
1-3	75.3%
3.1-6	22.9%
>6	1.8%
Total	100%

Respondents have opportunity to give multiple answers on a question which refers on visited sites within PF Vodno. Sredno Vodno (47.8%) and Vrv (26.8%) are the most visited sites within Park Forest Vodno (Chart 9). Also there is no statistically significant difference in visited sites within PF Vodno (Chi-square=0.388, df=1, p=0.534).

Chart 9. Visited sites within Park Forest
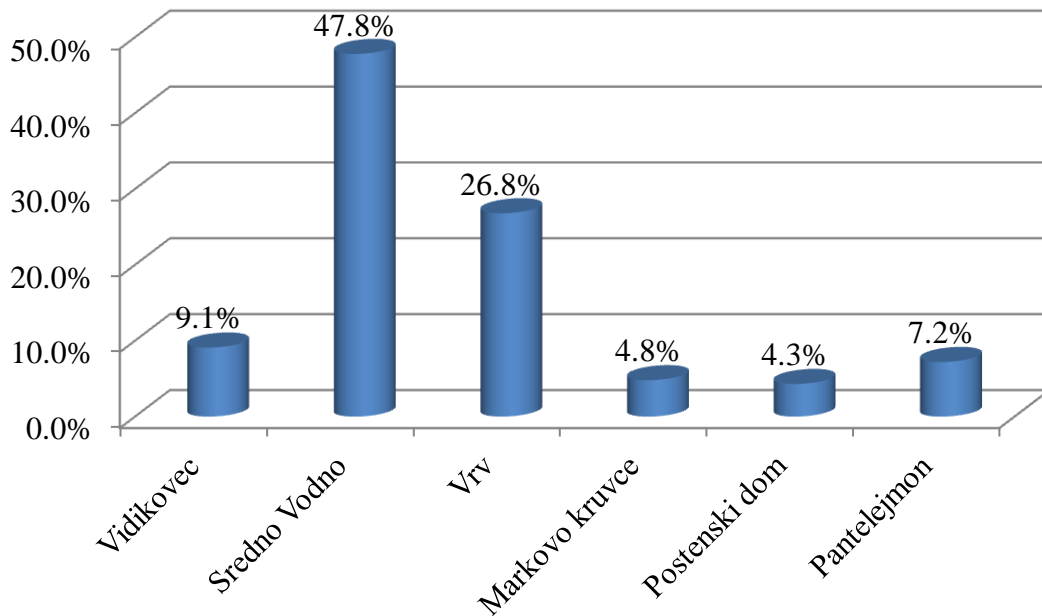
(Question No.6 Which sites within PF Vodno do you visit the most?)

4.3 Benefits

In the set of questions related with benefits which Park Forest Vodno provide to the visitors, respondents gave answers on the questions about activities which they are practicing in Park Forest, does being in nature make them feel positive or negative, what type of benefit they receive from Park Forest and did they like the landscape.

Results on activities which visitors practice in Park Forest Vodno showed that 22.1% are walking, 17.7% practicing sport, 15% recreation and 14.7% relaxation. Four of respondents (1.2%) doing other activities as sleigh riding (three of them) and one of them is enjoying nature (Chart 10).

Chart 10. Activities in Park Forest

Chart data labels:
- recreation: 15%
- walking: 22.1%
- fun: 7.1%
- relaxation: 14.7%
- sport: 17.7%
- make new friends: 1.5%
- picnic: 6.2%
- sit: 5.3%
- look at nature: 9.1%
- other: 1.2%
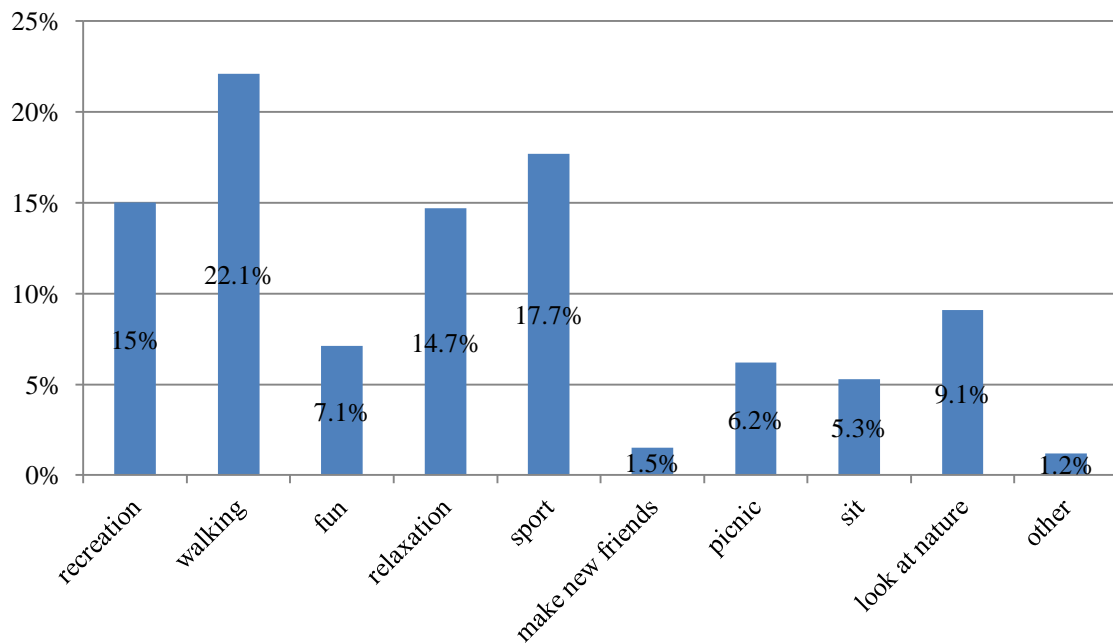
(Question No.7 What activities do you do when you visit PF Vodno?)

For 90.3% of visitors surveyed being in nature makes them feeling very positive and 8.8% positive while 0.9% is feeling neutral. Neither one said that being in nature make them feel negative or very negative (Table 7).

Table 7. How does being in nature make you feel? *(Question No.7)*

	Frequency (No. of responses)	**Percent**
Very positive	102	90.3%
Positive	10	8.8%
Neutral	1	0.9%
Total	113	100.0%

Most important benefits which PF Vodno provides to the visitors are ecological balance (47.8% of respondents) and pollution control (20.4% of respondents), 12.4% answered aesthetic value, 10.6% shade to pedestrians (Figure 3). Ten of respondents (8.8%) specified other benefits as "getting closer to the nature",

"health and enjoinment", "nature gives positive energy", peace", "recreation in nature"; results are showed in table 8.

Figure 3. Received benefits
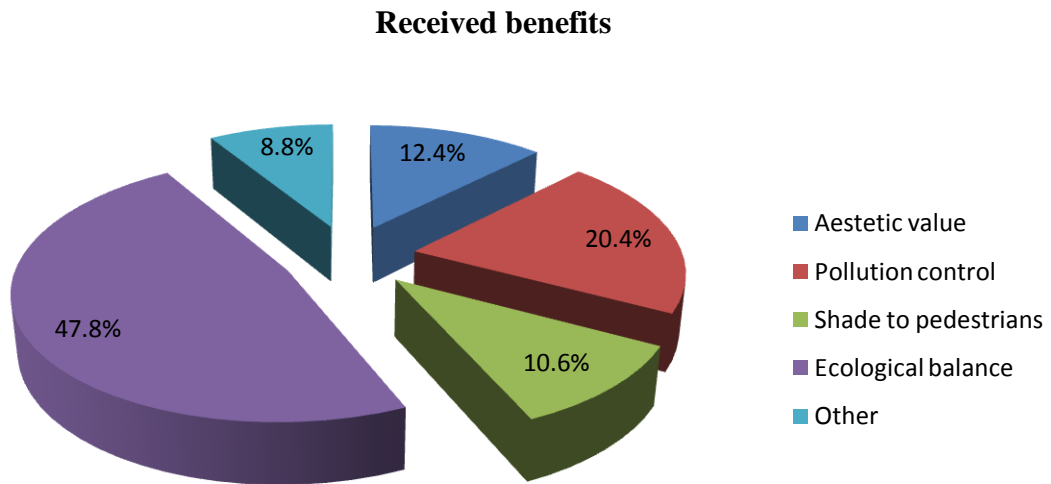
Received benefits

(Question No.9 What are the benefits you receive from PF Vodno?

Table 8. Other benefits which visitors receive from PF Vodno *(Question No.9)*

Other benefits	Frequency (No. of responses)	Percent (%)
Getting closer to the nature	1	0.9
Health and enjoinment	1	0.9
Oxygen	1	0.9
Nature gives positive energy	1	0.9
Peace	1	0.9
Recreation in nature	3	2.7
Vodno is lungs of Skopje	1	0.9
Water	1	0.9
Total	10	8.8

Largest percentages of respondents (93.8 %) like very much-much landscape of PF Vodno, 5.3% of surveyed visitors neither like neither don't like it. Only 0.9% said that do not like landscape of Park Forest (Chart 11).

Chart 11. Perception of landscape
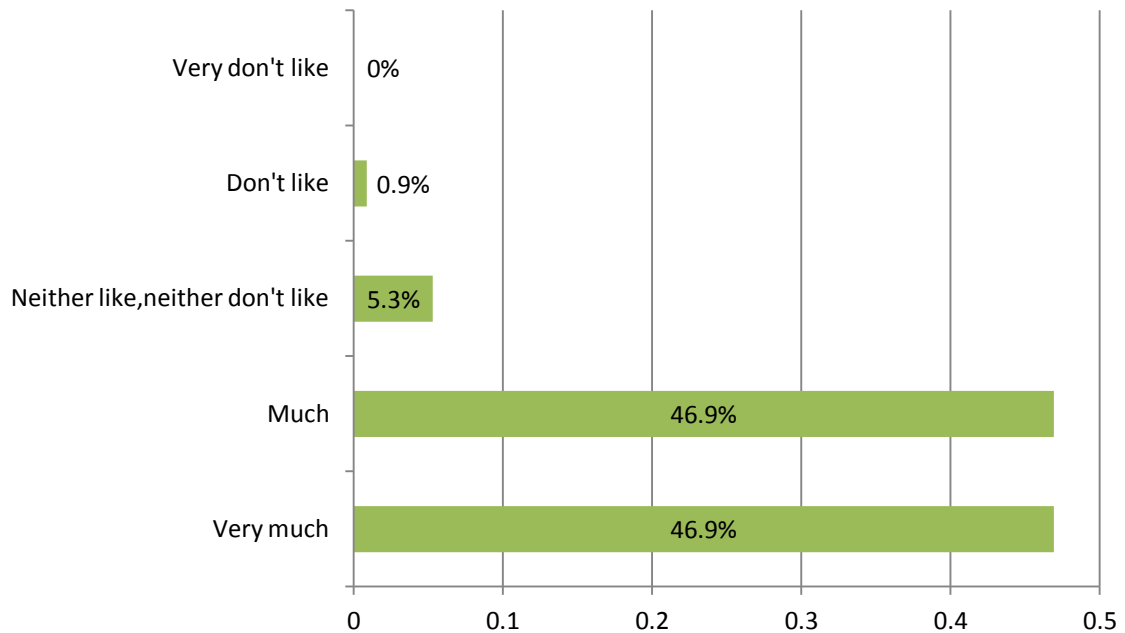
(Question No.10 How do you like the landscape of PF Vodno?)

Chi square tests showed that there is statistically significant difference in perception of landscape of PF Vodno (Chi-square=103.037, df=1, p=0.000)

4.4 Visitors preferences and perception of Park Forest

According to descriptive results on did respondents like more natural elements in Park Forest, 42.5% of respondents answered that are totally agreed, 45.1 are agreed, 10 respondents (8.8%) answered neutral and only 1 respondent (0.9%) answered disagree (Table 9). Statistical analysis with Chi-square test showed that there is significant difference in perception of natural elements (Chi-square=96.040, df=1, p=0.000).

Table 9. Preferences of natural elements in PF

	Frequency (No. of responses)	Percent (%)
Totally agree	48	42.5
Agree	51	45.1
Neutral	10	8.8
Disagree	1	0.9
Totally disagree	0	0.0
I don't know	3	2.7
Total	113	100.0

(Question No.11, I like more natural elements in PF Vodno)

Answers related with natural elements which respondents like or dislike are different. Only 8 persons (4%) form 133 respondents said that do not like natural elements such as "dry branches" (3%), and "tree species" (1%)(Table 11). Natural elements which they like differ from air, birds, trees, etc. (Table 10). Forest is the most liked natural element in PF Vodno (47 responds or 23.3%).

Table 10. Natural elements which visitors like

Like	Frequency (No. of responses)	Percent
Air	14	6.9%
Birds	11	5.4%
Chestnuts	1	0.5%
Flowers	6	3.0%
Forest	47	23.3%
Forest paths	11	5.4%
Greenery	14	6.9%
Like everything	13	6.4%
Landscape	7	3.5%
Lower temperature	1	0.5%
Nature	21	10.4%
Plants	3	1.5%
Streams	7	3.5%
Trees	33	16.3%
Water	13	6.4%
Total	202	100.0%

(Question No.12, Which natural elements do you like? Dislike?)

Table 11. Natural elements which visitors dislike *(Q.12)*

Dislike	Frequency (No. of responses)	Percent
Dry branches	6	3.0%
Tree species	2	1.0%
Total	8	4.0%

Analysis of question did they like human-made objects in PF Vodno, respondents gave answers from totally agree to totally disagree. Most of them respond with agree (38.9%), 21.2% are neutral and 1.8% totally disagree (Table 12). Chi-square test has shown that there is statistically significant difference between those who agree (totally agree) and disagree (totally disagree) (Chi-square=29.225, df=1, p=0.000)

Table 12. Like-dislike human made objects in PF

	Frequency	Percent (%)
Totally agree	26	23
Agree	44	38.9
Neutral	24	21.2
Disagree	17	15
Totally disagree	2	1.8
Total	113	100

*(Question No.13, I like human-made objects in PF Vodno)*

Cabin lift (22.6%), wooden benches (17.7%) and wooden viewpoints (15.4%) are the most favourite human-made objects in Park Forest. At the same time cabin lift is most answered as natural element which respondents dislike (18 times or 8%). (Table 13).

Table 13. Liked and disliked human-made objects in Park Forest

Like	Frequency	Percent (%)	Dislike	Frequency	Percent (%)
Cabin lift	51	22.6	Buildings	2	0.9
Churches	3	1.3	Cabin lift	18	8.0
Forest paths	3	1.3	Everything	4	1.7
Hotel	1	0.4	Garbage	13	5.8
Signs along paths	8	3.5	Houses	3	1.3
The cross	17	7.5	New housing buildings	1	0.4
Mountaineers house	17	7.5	"Postenski dom"	3	1.3
Swings	3	1.3	The cross	3	1.3
Water pipes	2	0.9	Mountaineers house	1	0.4
Wooden benches	40	17.7	Unfinished buildings	2	0.9
Wooden houses	19	8.4	Waste bins	1	0.4
Wooden tables	26	11.5	Non	66	29.2
Wooden viewpoints	35	15.4	Total	117	51.8
Total	226	100.0			

(Question No.14, Which human-made objects in PF Vodno do you like? Dislike?)

According to the results on the question "I like parks with dense vegetation" (Q15), visitors are totally agreed 42.5%, 30.1% are agreed and 17.7% are neutral (Chart 12). Statistical analysis with Chi-square test showed that there is statistically significant difference between those who are totally agreed and agreed and those who are disagreed and totally disagreed (Chi-square=58.560, df=1, p=0.000).

Chart 12. Like parks with dense vegetation
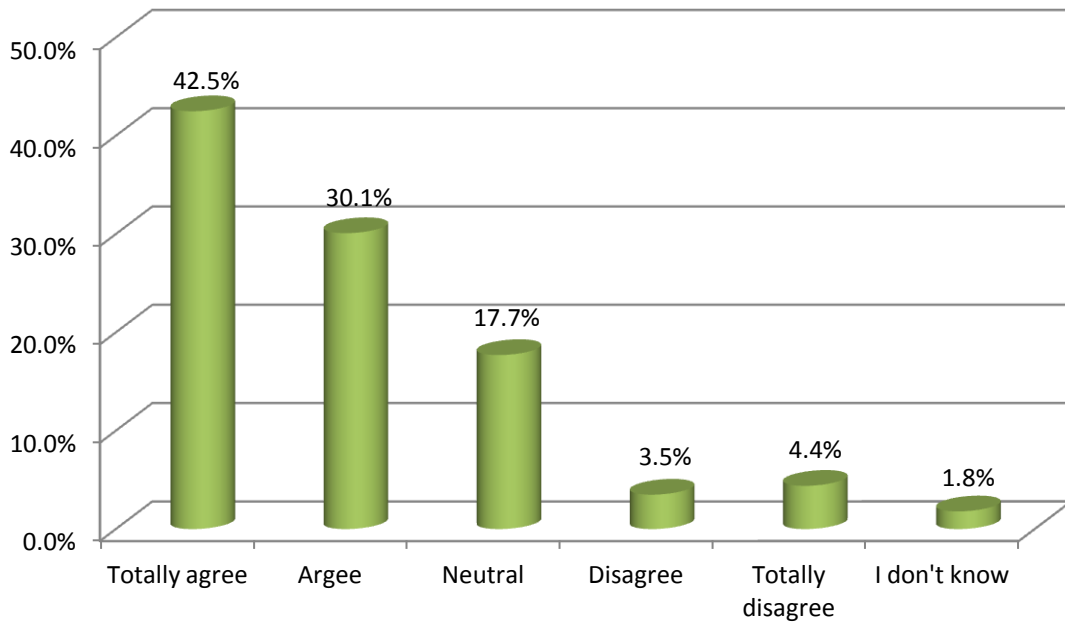
(Question No.15, I like parks with dense vegetation)

But also respondents like parks where the vegetation appears more manicured by humans (totally agree 31.0%, agree 55.8%) (Chart 13).

Chart 13. Like parks where the vegetation appears manicured by humans
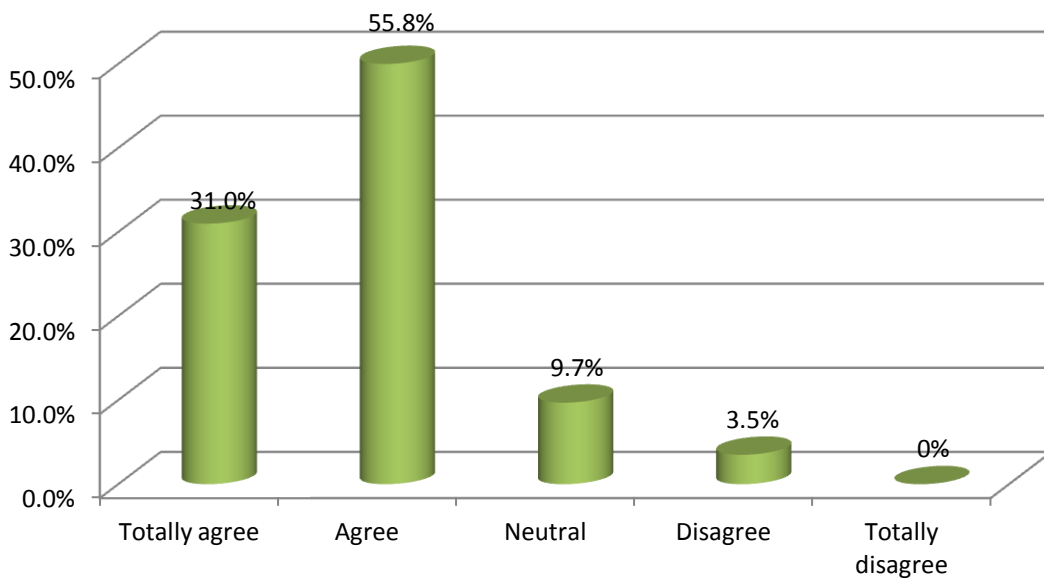
(Question No.16, I like parks where the vegetation appears more manicured by humans)

4.5 Safety

Further in survey was carried on part where was examined the visitors' perception of safety in the Park Forest Vodno.
Most of respondents feel safe in the Park Forest (74.3%), 12.4% are neutral (Chart 14). Chi-square test showed that there is statistically significant difference between those who agree and those who do not agree that feel save in PF (Chi-square=48.091, df=1, p=0.000).

Chart 14. Feel safe in Park Forest Vodno
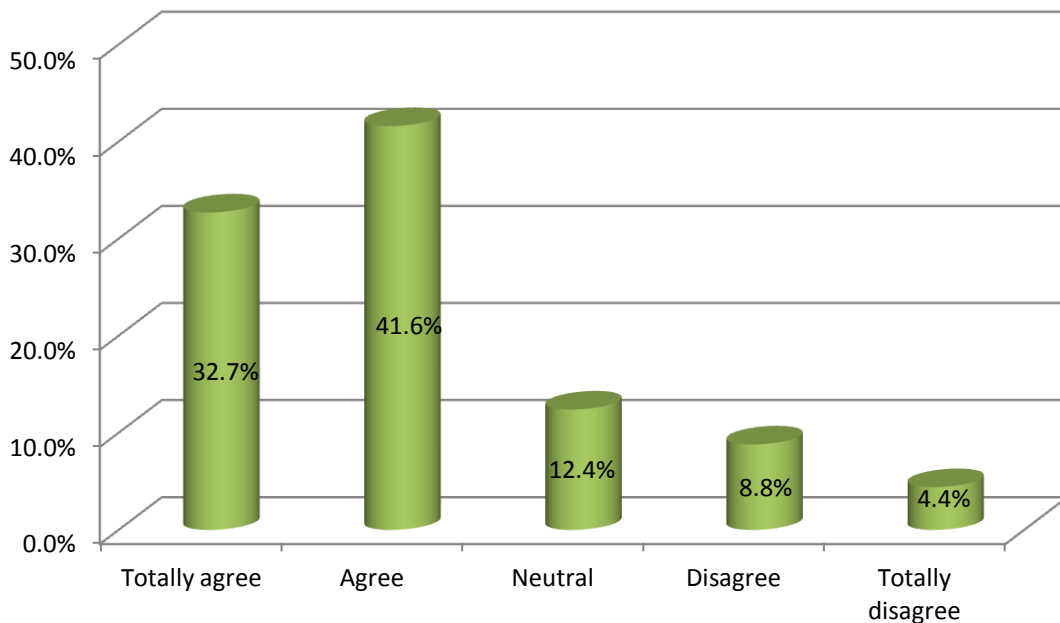
(Question No.17, I feel safe in Park Forest Vodno)

In the research respondents gave answers what make them feel safe or unsafe in the Park Forest. Results are showed in the Table 14 (safe) and Table 15 (unsafe).

Table 14. Things that makes visitors safe in PF

	Frequency (No. of responses)	Percent (%)
Big number of visitors	58	46.4
Experience	1	0.8
Forest	1	0.8
Forest guards	12	9.6
Infrastructure	1	0.8
Lighting	3	2.4
Marked paths	6	4.8
No answer	13	10.4
Ramp for vehicles	1	0.8
Signs along paths	1	0.8
The red cross unit	23	18.4
Total	125	100.0

(Question No.18, What things in PF Vodno make you feel safe? Unsafe?)

Table 15. Things that makes visitors unsafe in PF *(Q.18)*

	Frequency (No. of responses)	Percent (%)
Bikes	3	2.4
Cars(traffic)	33	26.4
Dogs	2	1.6
Dry branches	2	1.6
Dry trees	2	1.6
No forest police	4	3.2
No guards	4	3.2
No signs for pedestrians	5	4.0
Non	54	43.2
Poorly marked paths	4	3.2
Snakes	6	4.8
Unlighting	6	4.8
Total	125	100.0

According to the respondents lighting (23.0%) and placing guards post in the park (22.1%) will make PF Vodno a safer place for visit, 17.4% of visitors considered that heavier penalties would make PF a safer for visit. 5.1% considered other things such as cameras, SOS phone and forbidding traffic for vehicles' would make it safer (Table 16).

Table 16. Thinks which will make PF safer place for visit

	Frequency (No. of responses)	**Percent** (%)
Lighting	54	47.8
Security	38	33.6
Upgrade maintenance services	30	26.5
Heavier penalties	41	36.3
Place guard post in the park	52	46.0
Have railing/fencing to secure the park	7	6.2
Reduce heavy planting areas	1	0.9
Other		10.6
-Cameras	2	
-SOS phone	2	
-Vehicles traffic to be forbidden	8	
Total	235	100.00

(Question No.19, On your opinion, which of the following would make Park Forest Vodno a safer place to visit? (Please circle all that apply)

4.6 Management

According to the answers (Q20), 37.2 % of respondents think that Park Forest Vodno is good managed and maintained, 26.5% consider as neither good neither bad managed and maintained and on one said that Park Forest Vodno is excellent managed and maintained (Chart 15) but statistical Chi-square test showed that there is no statistically significant difference in people's perception of management and maintaining of PF (whether is good or bad) (Chi-square=0.111, df=1, p=0.739).

Chart 15. Perception of management and maintaining of PF
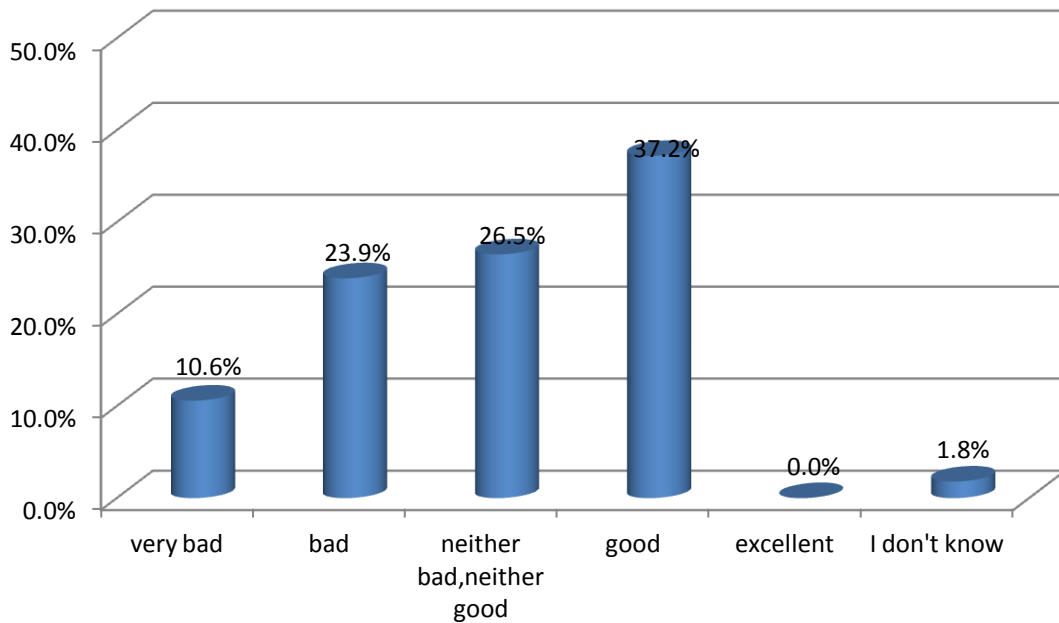
(Question No.20, How well do you feel PF Vodno is managed and maintained?)

Most of respondents are not well informed (45.1%) about practices or activities related with PF Vodno, 25.5% are uninformed and only 2.7% considers as very well informed (Chart 16).

Chart 16. How well are visitors informed?
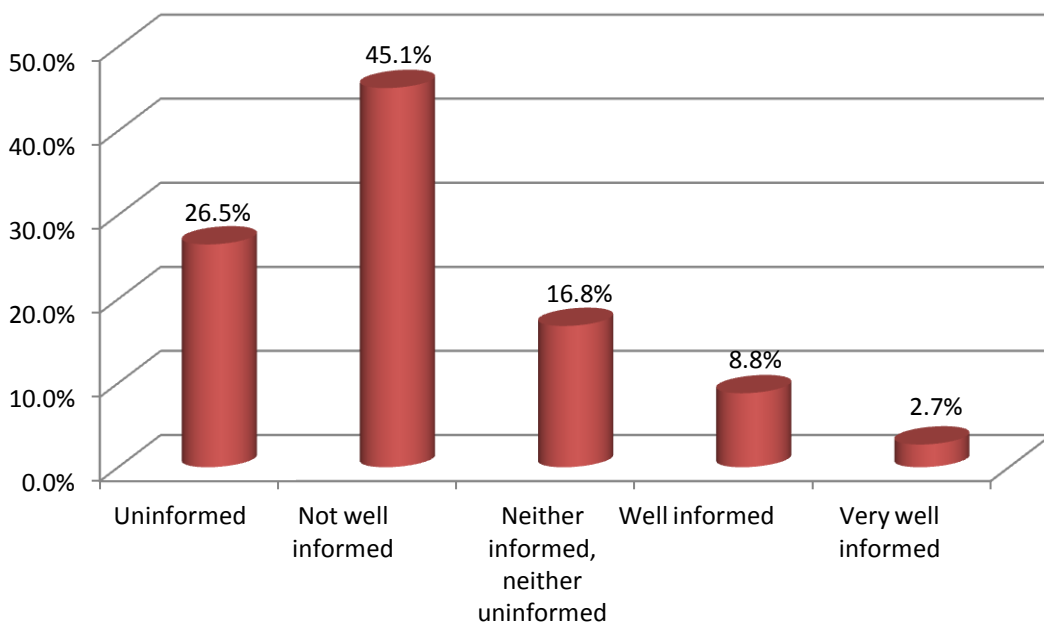
(Question No.21, How well do you feel you are informed about maintenance practices or activities at Park Forest Vodno?)

On line presentations (28.3%) and newsletters (23.3) are the most answered as communication method through which visitors stayed informed about management, planning and maintain activities in PF Vodno. No one is getting information's by e-mail notifications (Table 17).

Table 17. Communication method to stay informed

	Responses (N)	Percents (%)
E-mail notification	0	0.0
City website	12	7.5
Newsletters or mailings	37	23.3
Online presentations	45	28.3
Posters or notices at public facilities	14	8.8
Mass media (TV, Radio…)	21	13.2
Facebook	17	10.7
Other ideas		
From friends	5	8.2
Not receiving information	8	
Total responses	159	100.0

(Question No.22, What public outreach or communication method do you use to stay informed about management, planning and maintain activities in Park Forest Vodno?)

Almost everyone respond that did not offered advice to the government on ways to manage Park Forest Vodno (95.6%), only 4.4% did it (Figure 4).

Figure 4. Offered advice
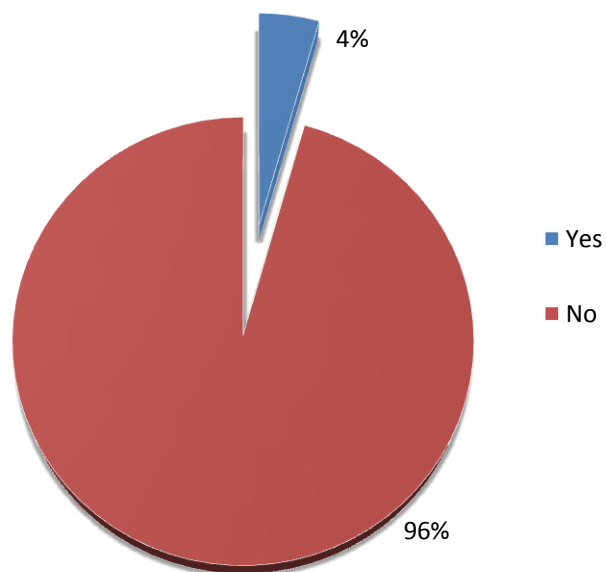
(Question No.23, Have you ever offered advice to the government on ways to manage urban park Vodno?

Table 18. Ways of offering advice *(Q23)*

Responses	N
Project to the last two Mayors	1
Proposed ideas on responsible service	1
Public debate in the City council	1
To impose fines for throwing garbage	1
To the responsible of public transport enterprise	1
Total	5

Forum (21.6%), official web cite (21.9%) and contact center (19.0%) is the most answered as easier way for offering advice to the responsible (Table 19).

Table 19. Ways to offer advice

	Frequency (No. of responses)	Percent (%)
Advertizing	1	0.7
Contact center	26	19.0
Don't know	1	0.7
e-mail	3	2.2
Facebook	10	7.3
Forum	30	21.9
Official website for Vodno	31	22.7
Public debates	8	5.8
Sector in the municipality for managing parks	1	0.7
Suggestion box on site	24	17.5
Workshops	2	1.5
Total	137	100.0

(Question No.24, What can the government do to make it easier for local people to offer advice about Park Forest Vodno?

4.7 Results from correlation test

In the correlation tests, non parametric - Spearman test are done where correlation is significant at the p=0.05 level (two – tailed).

Results showed that there is relationship between seasonal visits (spring and autumn) and level of education. Seasonal visits are negatively related to the educational level, with a coefficient r= -, 368[**] (moderate to substantial relationship) for spring (p=0.000); and with a coefficient r= -,271[**] (low to moderate relationship) for autumn (p=0.004).

Average time per visit spent in PF Vodno is in relationship with age. Average time spent in PF is positively related to the ages with a coefficient r= ,502[**] (Substantial to very strong relationship) (p=0.000).

Analysis showed that there is relationship between benefits which visitors receive form PF and gender. They are negatively correlated with a coefficient r= - ,242[*] (low to moderate relationship) (p=0.014).

Human - made objects are negatively correlated to the gender, with a coefficient r= -,220[*] (low to moderate relationship) (p=0.019).

There is relationship between natural elements and gender, age and level of education. Natural elements are positively correlated to the gender, with a coefficient r= ,284[**] (low to moderate relationship) (p=0.002); negatively correlated to the age, with a coefficient r= -,286[**] (low to moderate relationship) (p=0.002) and positively correlated to the level of education, with a coefficient r= ,210[*] (low to moderate relationship) (p=0.026).

There is relationship between levels of education and feeling safe in PF. Level of education is positively related with feeling safe in PF, with a coefficient r= , 229[*] (low to moderate relationship) (p=0.015).

5   Discussion and conclusions

The study offers a general understanding of the visitor's perception regarding urban forests in one of the most visited Park Forest in Skopje. As lifestyles have become more urban, the needs and demands for urban forests, parks and trees become more diverse. Although urban forests are places for social contacts and bringing people with different age groups, cultural and social backgrounds together, at the same time many users are looking for solitude, peace and quiet. Moreover, awareness of the importance of ecology and preserving urban forests benefits is increasing among the residents. This area has multiple uses and functions, such as improving environment quality, providing recreation and serving as place for passive and active refreshment from daily stresses. Research was motivated by the fact that there is lack of analysis towards urban forestry in general as well as toward Park Forest Vodno.

For many people, direct and indirect contact with nature is an essential aspect of their quality of life. Failure to understand how people perceive and value nature can lead to misunderstanding between managers and the users. The survey was an initial outreach effort to hear from visitors about the issues and opportunities for improving the quality of Park Forest Vodno. Within the questionnaire structure are covered six aspects of visitors' perception about urban forests: recreational, benefits from urban forests, preferences and perception, safety, management and socio-demographic questions.

The average Park Forest Vodno visitor is a young person, mostly male (65,5%), with higher formal education (78,8%), employed in private sector (47,7%) and living in a vicinity of the area (41,6%). They are reaching the PF by walking (47,3%) and biking (28%); preferred activities are walking (22,1%), followed by sport (17,7%) and recreation (15%) together with his friends (49,7%) or on his own.
Perhaps it may be explained by the fact that these people need more active relaxation in quiet surroundings explaining the peak arrival in late afternoon, while there is a decline of activity during noon. The key factor for active use is easy access to the area, preferably within walking distance from home.

Recreation in nature is still a vital need of modern man. Increasing need for recreation is caused by the influence of several factors: fatigue of modern man due to intense intellectual and physical work, the rapid increase of urban population and decrease of its spare time. A man becomes less and less connected to nature, and many more people want to regain some sort of connection with nature even for a short time

(Vukadinovic, 2009). An important factor for extensive recreational activity is the travel distance to the area. Both Schmithusen and Wild-Eck (2001) and Coles and Bussey (1999) found that walking was overwhelmingly the most popular activity in urban forests. Both studies commented on the importance of quick and ready access to the forest. In the UK study most users walked to the forest and arrived within 5 minutes. The European summary differed in that fewer than 30% walked and a very significant percentage used their private car.

The first question of the questionnaire considers the distance from the Park Forest. The dominant visitor group consists of inhabitants of the city who are living in the nearest settlements confirming the urban character of the Park Forest Vodno. People living at a short distance from the Park Forest travel limited time and thereby a visit happens more frequently, but the length is also much shorter. During the winter time, because of the weather conditions, everyone prefers to be at safe and hot place, but when sun comes in spring, walking in the sun, taking a deep breath of clean air is something very common for the users of this Park Forest. Walking is internationally the most important activity in forest recreation (Germany: Roznay, 1972; Flanders: Gillis and Lust, 1976; Vanderlinden and Lust, 1998; Sweden: Lindhagen, 1996; Switzerland: Gasser, 1997; Ireland: Guyer and Pollard, 1997). In this research obtained results shown the same tendency. Respondents usually practices walking (22,1%), sport (17,7%) and recreation (15%) together with their friends (49.7%) without longer retention. There are several marked paths in the Park Forest Vodno which leads to the two most visited sites Sredno Vodno (47,8%) and Vrv (26,8%), through very pleasant natural environment. New established facilities such as bus transportation to Sredno Vodno and cabin lift make Vrv accessible for larger group of people. These findings on the relationship between use and proximity are important for planning provision. Knowledge of how Park Forest sites are used is essential for deciding how the sites should be managed and maintained.

Second part of the survey aims to give insight into the current state about benefits of urban forests. Urban forests and trees contribute to a better quality of living environment in cities, for example by improving air quality and consequently the mental and physical health of urban residents. Visitors in Park Forest Vodno are feeling very positive in nature (90,3%).

Landscape variation is created through different colors, textures, forms and densities of plants. Trees can direct vision, break up large spaces, and define space. They can be used to frame scenes and to provide foreground and backgrounds for landscape features. Much of the aesthetic experience is subjective in nature and has impacts on people's mental and emotional state (Kaplan and Kaplan 1989). Almost all of Park Forest visitors like the landscape of Vodno. According to users ecological balance is the most received benefit from the Park Forest Vodno. Other mentioned benefits which Park Forest provides to the visitors are health and enjoinment, peace, water etc.

Perception of respondents regarding the natural elements and human-made objects as well as parks with dense vegetation and parks where the vegetation appears more manicured by humans is divided. Visitors like both natural elements (87,7%) and human-made objects (61,9%) in Park Forest Vodno as well as parks with dense vegetation (72,6%) and parks where the vegetation appears more manicured by humans (86,6%). Among natural elements in the area, forest (23,3%) is considered as one of the most attractive type of natural element besides trees (16,3%) and nature (10,4%). Most respondents give a positive response to additional infrastructure, giving absolute priority to the appearance of litter bins, wooden human-made objects and elements (53%). Cabin lift is the human-made object which appears most frequent at the same time as object which respondents like (22,6%) and dislike (8%). This diverse preferences demonstrates therefore how important are multifunctional planning and design of the area. An appreciation of visitor demands on natural resources and man-made facilities is required to identify the key issues that can be useful in decision-making and management. The overall Park Forest area is evaluated very positively. On the one hand, management is needed because of security aspects and aesthetic reasons, while on the other hand there is an increasing demand for unmanaged areas based on ecological arguments. Moreover, the aesthetic valuations may partially change over time and are influenced by trends, cultural system and knowledge. To have more precise picture of perception and preferences of visitors regarding Park Forest Vodno, further research is needed in the purpose of future development of the area.

According to Wekerle and Whitzman (1995), some park forests have become 'hot spots' of crime, vandalism and other criminal activities like drug dealing, bashing and sexual violence . Visitors perceive Park Forest Vodno as safe place for visit (74,3%) and did not recognize that kind of activities in the area. Think which make them feeling unsafe in the Park Forest is car traffic. Big number of visitors and Red Cross unit make them feel safe in the area. According to respondents lightening, security, heavier penalties and guards in the Park Forest will make place safer for visits as well as vehicle traffic limitation. This part of the research is directed towards understanding the first level of knowledge of the problem and later, helps to determine measures on how to minimize the current situation through design and management considerations.

Management and maintains of the urban forest is a challenging task not only because of harsh growing conditions but also because of various, often conflicting, demands, needs and goals. A fifth section in the questionnaire was dedicated to the management and management activities as well as relationship between public administration and users as far as information and participation are concerned. The area is not maintained properly and is threatened by buildings, spontaneous settlements, and restricted government funds. Dwellers of Skopje whose visit PF Vodno are not informed or not well informed (71,6%) about maintenance and management activities. Communication with citizens and users is essential for better

understanding of visitors' needs and demands, thus, the population must be actively involved in decision making and the needs of the population must be considered. Despite the absence of public action in terms of providing information, encouraging participation and promoting awareness in this sector, those interviewed showed considerable interest in being involved in the public body's planning activity. The information should be principally circulated by means of distribution of informative material through official website for PF Vodno (22,7%), forum (21,9%) or via a specially set up office or a free phone number (19%). It is however relevant to note that a big number of respondents express the need to have a more active say on the question of planed activities in the Park Forest through public meetings such as debates on the matter. Urban forestry offers a great opportunity for all sections of an urban society to meet in an arena that can be designed and used in a participatory way to benefit all.

Forest structure and particularly heterogeneity in structure as preferred by visitors should be introduced into management plans. This structural variation is both for natural environment and recreation more interesting than the perception of commercial Park Forest (Roovers at all, 2002).

There is also an increasing need to define and promote the socially integrative potential of Park Forest to integrate people with specific needs and demands. Park Forest area at the peri-urban belt of Skopje is important social meeting place for people with different cultural, age groups and social backgrounds.

In the future, a comprehensive picture about the perception and acceptance of the Park Forest Vodno should be obtained. How to make PF Vodno more attractive for people age over 40 years? How to attract citizens to visit PF during the whole year and from longer distance? In which way PF should be developed, should stay natural or be more "manicured"? How to include citizens in decision-making process? Collecting this information will support the development of Park Forest policies on a strategic level and the setting of clear targets for provision of multifunctional parts in Park Forest area. Given many residents' high appreciation of Park Forest benefits, it is worth to fully account for urban forest benefits and elaborate more detailed criteria for Park Forest development. The key issues related to the future benefits of Park Forest Vodno include what is demanded and perceived by whom, and to what extent and how this Park Forest could be preserved during modernization and urbanization of City of Skopje.

The study contributes to better understanding of visitors' relationship toward Park Forest, recreational and beneficial values of forests. Results indicate that knowledge about the preferences and needs of people on site, knowledge of their habits and needs is valuable in the process of planning and landscaping. The general zoning plan of recreational areas is based on the possibilities of doing different activities and to identify specific attractions in the area. There are several key trends shaping recreational areas, some of them are demographic trends, some social or political, others are technological and economical, or may be related to lifestyle.

Planners, designers and managers together with the public should works as a team.

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Annex 1.

Questionnaire:

1. How far is your home from Park Forest Vodno?

   _____ (km)

2. How do you reach Park Forest Vodno? Which transport means do you use for coming in this Park Forest? (Please circle all that apply)
   1. Walking (by foot)
   2. Bike
   3. By car
   4. Public transport
   98. Other (please specify)_____

3. How often during each season do you visit Park Forest Vodno?

3.1 Winter
   1. Never
   2. Very rare (1-2 times per mount)
   3. Rarely (3-5 times per mount)
   4. Often (3-4 times per week)
   5. Very often (everyday)
   99. I don't know

3.2 Spring
   1. Never
   2. Very rare (1-2 times per mount)
   3. Rarely (3-5 times per mount)
   4. Often (3-4 times per week)
   5. Very often (everyday)
   99. I don't know

3.3 Summer
   1. Never
   2. Very rare (1-2 times per mount)
   3. Rarely (3-5 times per mount)
   4. Often (3-4 times per week)
   5. Very often (everyday)
   99. I don't know

3.4 Autumn
   1. Never

2. Very rare (1-2 times per mount)
3. Rarely (3-5 times per mount)
4. Often (3-4 times per week)
5. Very often (everyday)
   99. I don't know

4. With whom you come here most often? (Please circle all that apply)
   1. Alone
   2. With my partner
   3. With my family
   4. With friends
   5. With my neighbors
   6. With my colleagues

5. How much time per visit in average do you spend in Park Forest Vodno?
   _____ (in hours)

6. Which sites within Park Forest Vodno do you visit the most?
   1. Vidikovec
   2. Sredno Vodno
   3. Vrv
   4. Markovo kruvce
   5. Posetnski dom
   6. Pantelejmon
   98. Other (please specify) _____

II. Benefits

7. What activities do you do when you visit Park Forest Vodno? (Please check all that apply)
   1. Recreation
   2. Walking
   3. Fun
   4. Relaxation
   5. Sport
   6. Make new friendships
   7. Picnic
   8. Sit
   9. Look at nature
   98. Other_____

8. How does being in nature make you feel?
1. Very positive   2. Positive   3. Neutral   4. Negative   5.Very negative   99. I don't know

9. What are the benefits you receive from Park Forest Vodno?
   1. Aesthetic Value
   2. Pollution Control
   3. Shade to pedestrians
   4. Ecological Balance
   98. Others (please specify) _____

10. How do you like the landscape of Park Forest Vodno?

1. Very much   2. Much   3. Neither like, neither don't like   4. Don't like   5. Very don't like   99. I don't know

III. Preferences and perception

11. I like more natural elements in Park Forest Vodno
   1. Totally agree   2. Agree   3. Neutral   4. Disagree   5. Totally disagree
      99. I don't know
12. Which natural elements do you like? Dislike?
   _____

13. I like human-made objects in Park Forest Vodno
   1. Totally agree   2. Agree   3. Neutral   4. Disagree   5. Totally disagree
      99. I don't know

14. Which human-made objects in Park Forest Vodno do you like? Dislike?
   _____

15. I like parks with dense vegetation
   1. Totally agree   2. Agree   3. Neutral   4. Disagree   5. Totally disagree
      99. I don't know

16. I like parks where the vegetation appears more manicured by humans
   1. Totally agree   2. Agree   3. Neutral   4. Disagree   5. Totally disagree
      99. I don't know

IV. Safety

17. I feel safe in the Park Forest Vodno
   1. Totally agree   2. Agree 3. Neutral   4. Disagree   5. Totally disagree
      99. I don't know

18. What thinks in Park Forest Vodno make you feel safe? Unsafe?
   _____

19. On your opinion, which of the following would make Park Forest Vodno a
   safer place to visit? (Please circle all that apply)

      1. Lighting
      2. Security
      3. Upgrade maintenance services
      4. Heavier penalties
      5. Place guard post in the park
      6. Have railing/fencing to secure the park
      7. Reduce heavy planting areas
         98. Other (please specify)_____

V. Management

20. How well do you feel Park Forest Vodno is managed and maintained?
   1-Very bad;
    2- Bad;
   3- Neither bad neither good;
   4- Good
   5- Excellent
   99. I don't   know

21. How well do you feel you are informed about maintenance practices or
   activities at Park Forest Vodno?

   1. Uninformed
   2. Not well informed
   3. Neither informed, neither uninformed
   4. Well informed
   5. Very well informed
      99. I don't know

22. What public outreach or communication method do you use to stay informed about management, planning and maintain activities in Park Forest Vodno?
   1. E-mail notification
   2. City website
   3. Newsletters or mailings
   4. Online presentations
   5. Posters or notices at public facilities
   6. Mass media (TV, Radio…)
   7. Facebook
   98. Other ideas? _____

23. Have you ever offered advice to the government on ways to manage urban park Vodno?
   1. YES   2. NO   99. I don't know

   If yes, how? _____

24. What can the government do to make it easier for local people to offer advice about urban forest Vodno?

   _____

VI. Background questions

25. Gender
      1. Male   2. Female

26. How old are you?
      _____

27. Occupation
      1. Self employed/business owner
      2. Government worker (state or public administration)
      3. Private sector worker
      4. Student
      5. Retired
      6. unemployed

28. What is your education level?
      1. Primary school and less
      2. Lower Secondary school

3. Upper Secondary school
4. Faculty level (University graduate)
5. More than faculty level

29. In which settlement you live?

   _____

Date: _____
Place: _____

Annex 2.

Table 20: Research calendar

Date	Day	Time	No. of respondents
07.05.2012	Monday	09-14	5
		14-18	11
10.05.2012	Thursday	09-14	4
		14-18	9
12.05.2012	Saturday	09-14	13
		14-18	8
21.05.2012	Monday	09-14	3
		14-18	12
24.05.2102	Thursday	09-14	5
		14-18	12
26.05.2012	Saturday	09-14	20
		14-18	11
	6		**113**

Annex 3.

Table 21: Correlations

Correlations

		Gender Q.25	Age Q.26	Occupation Q.27	Level of education Q.28
Spring	Correlation Coefficient	-.110	-.077	.054	-.368**
	Sig. (2-tailed)	.247	.417	.569	.000
	N	113	113	113	113
Autumn	Correlation Coefficient	-.148	.151	-.172	-.271**
	Sig. (2-tailed)	.118	.111	.068	.004
	N	113	113	113	113
Spend time per visit	Correlation Coefficient	-.011	.502**	-.050	.005
	Sig. (2-tailed)	.910	.000	.602	.960
	N	113	113	113	113
Being in nature	Correlation Coefficient	-.176	.124	.033	-.284**
	Sig. (2-tailed)	.062	.191	.730	.002
	N	113	113	113	113
Received benefits	Correlation Coefficient	-.242*	.067	.057	-.015
	Sig. (2-tailed)	.014	.502	.569	.881
	N	103	103	103	103
Natural elements	Correlation Coefficient	.284**	-.286**	.077	.210*
	Sig. (2-tailed)	.002	.002	.417	.026
	N	113	113	113	113
Human made objects	Correlation Coefficient	-.220*	.045	-.131	.109
	Sig. (2-tailed)	.019	.633	.167	.250
	N	113	113	113	113
Feeling safe	Correlation Coefficient	.170	-.086	-.103	.229*
	Sig. (2-tailed)	.072	.367	.280	.015
	N	113	113	113	113

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).