



Tourist preferences for outdoor recreation in the context of equity and efficiency: Evidence from choice experiments in Rila National Park

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Abbreviations

CE – Choice Experiments
CVM – Contingent Valuation Method
IID – Independent and Identically Distributed
IIA - Independence of Irrelevant Alternatives
NBT – Nature-Based Tourism
VIF – Variance Inflation Factor
WTP – Willingness to Pay

Abstract

Travel and tourism worldwide is increasing steadily. Often tourism demand exceeds supply in top tourism locations. Therefore these locations face difficult challenges in managing the balance between being accessible, distributing limited access fairly amongst interested travelers and maximizing tourism income streams. The purpose of this study is to analyze individuals' preferences for the attributes defining potential park developments in Rila National Park in Bulgaria in the context of equity or efficiency. A choice experiment was conducted in which tourists were asked to state their choices from two hypothetical park scenarios on the basis of their attributes and the option to visit the current Rila National Park. The attribute for access policy was selected to be the determinant of equity and efficiency.

The survey was conducted among 67 international tourists and 12 local tourists. The collected data was analyzed using the logit model. The results obtained did not support the idea that there is any relation between the type of access policy to the park and tourists' preferences for equity or efficiency as it was suggested. It was found that the parameters for type of park, level of crowding, percentage of the fee which goes for nature conservation, and respondents' age were strongly related to the probability of choosing specific type of outdoor recreation.

Keywords: choice experiments, equity, efficiency, logit, nature-based tourism

CHAPTER 1 INTRODUCTION

1.1. Background

The increasing world populations, real disposable income per capita, and the rapid improvements in transportation are all factors that put significant pressure on the natural resources being used for recreation purposes. Therefore, economists and business people must start integrating the problem of recreational resources scarcity into the framework of economic theory and tourism development (Anderson & Bonsor, 1974).

During the last hundred years tourism has become one of the world's largest income generators. This rapid and extreme growth has caught many of the stakeholders involved unaware and unprepared. Since the industry's emergence after the Second World War, tourism's potential for revenue and development has been highly exploited by the post-war economy, both by individual entrepreneurs and governments. In that period main priority was growth and promotion rather than management control. Tourism was recognized as a "natural" renewable resource industry and visitors were considered as individuals who come only to admire, not to consume the landscape, the customs, and the monuments of a leisure destination. Nevertheless, as tourism size and scope increased, it became apparent that this industry, like many others, also competes for scarce resources and capital. Further on, it became evident that its non-consumptive attributes not necessary prevent the deterioration, erosion and alternation of nature and the associated attractions (Murphy, 1985).

Tourism is a resource dependent industry, therefore must compete for various types of scarce resources to survive (McKercher, 1993). In many destinations, tourism success is almost totally dependent on the high quality of the resource base. According to McKercher (1993), there are three discrete types of tourism resources, namely: 1) natural resources such as land, air and water; 2) man-made resources including the build up heritage and 3) cultural resources.

Being an industry which depends strongly on resources, most of the related activities often tend to over consume. As a result, the entire list of the above stated resources are facing the risk of being overexploited. As a consequence, the overuse of a given resource can cause wide range of social, cultural and environmental impacts. One of the most common issues related to increased

tourism activities are associated with environmental degradation, greater volume of traffic flow, higher land prices, congestion and changes in the social structure of host communities (McKercher, 1993).

1.1.1. Motivation of this thesis

As mentioned previously, travel and tourism worldwide is increasing steadily. As more and more people can afford to travel, there is increasingly strong pressure on unique tourism resources such as natural parks, historic sites and places of worship to manage large number of visitors. Often tourism demand exceeds supply in top tourism locations. Therefore these locations face difficult challenges in managing the balance between being accessible, distributing limited access fairly amongst interested travelers and maximizing tourism income streams.

There are great numbers of studies that identify environmental resources as key component that support leisure-based tourism (Krippendorf, 1982; Buttler, 1986; McKercher, 1993).

However, in the research literature there is limited information on how the concepts of equity and efficiency shape individuals' preferences with respect to access to such resources.

The aim of this thesis is the investigation of possible connection between those two concepts and tourists' preferences for access to natural resources.

1.1.2. Purpose of this thesis

In the research literature, price-based allocation mechanism is proposed as an efficient strategy for allocating access to services in semi-public domains such as recreation, healthcare, and education (Brouwer & Schut, 1999; Lewis & Sappington, 1995). Nowadays, different types of users' fees have been used as a tool for efficient rationing of scarce resources. Nevertheless, policy makers and consumers are not always eager to adopt this tool to obtain access to such services (Anderson, Black, Dunn, Alonso, Norregard, Anderson, & Peterson, 1997). User fees can be economically efficient but price-based allocation mechanisms can result in distributions with very unequal access levels between consumers (Petrou & Wolstenholme, 2000; Vagero, 1994).

The purpose of this thesis is to investigate to what extent visitors of publicly owned national park agree to pay entrance fee for their access and use, and whether they believe that differentiated

entrance fee is or it is not an efficient and equitable way of generating income. Moreover, the objective of this work is to find out which factors play important role when individuals make decision about what kind of outdoor recreation site to visit. This means that somehow we must reveal some of the tourists preferences for outdoor recreation. To achieve this, a case study about a protected area in Bulgaria was developed in which a marketing method called choice experiment (CE) was applied. The study site, Rila National Park, currently provides fully equitable access to its resources. A CE was conducted in which tourists were asked to make their choices from two hypothetical park scenarios on the basis of their attributes and the option to visit the current Rila National Park. The attribute for access policy was selected to be the determinant of equity or efficiency. Specifically, the case study presented in this thesis demonstrates how visitors of a national park trade off price, level of crowding and operational characteristics when choosing such recreational opportunity. While some of the unique geological characteristics of this region cannot be altered to a great extent by mankind, other important attributes like price and operational features can have significant impact on how visitors choose a specific park. Finally, under several assumptions, from the analysis of respondents choices we can obtain information about to what extent they prefer equity over efficiency and vice versa with respect to access to Rila National Park.

It is out of the objectives of the study to compare the degree of efficiency of the economic instruments used with the degree of efficiency of others.

1.1.3. Structure

This thesis has five chapters and is organized as follows: the first chapter gives introduction to the thesis and briefly describes the required background information on the topic, the related terminology about tourism, equity and efficiency and a description of the study area Rila National Park. Chapter 2 provides a definition of the methods used - conjoint analysis, choice experiments, and explains the theory behind them. Further on, some specific applications of choice experiment are commented in the context of the thesis. Chapter 3 presents the design of the choice experiment. Finally, chapter 4 presents the results of the empirical analysis. Conclusion and provision for future research as well as discussion of the limitations of the study are provided in chapter 5.

1.2. Current Situations and Trends in Tourism and Protected Areas

Tourism has become an economic and social phenomenon in everyday life of hundreds of million people all over the world. It is believed that this industry is the world's largest and fastest growing sector of the global economy. According to Bojamic & Calantone (1990), this increasing importance has not been met with an appropriate growth in research and suitable use of marketing tools.

The two authors suggest that pricing and promotion are two of the main tools that must be understood and used effectively by the marketer of tourism. However, state governments have been slow in adopting marketing practices for their public programs related to tourism. Nonprofit organizations, like governments, should have in mind that they are offering a package of services to the public. As an example, we can take national parks, where tourists can enjoy and use different type of facilities and recreation options such as boating and fishing, horseback riding, golf courses, and many other in addition to the natural scenery. Some of those services compete with firms in the private sector, represented by private hotels and motels, tour guides, ski rentals and many others. The main concern is that when it comes to managing public organizations, usually the goal is to offer a favorable amount of services at prices which are reasonable or free of charge. As a consequence, such entities have to find the proper trade-off between the number and levels of service components and the prices charged for these services (Bojamic & Calantone, 1990).

1.2.1. Defining NBT

This work will focus closely on nature-based tourism (NBT). What follows is a short description of this type of tourism and the related terminology.

According to Valentine (1992), "nature-based tourism is primarily concerned with the direct enjoyment of some relatively undisturbed phenomenon of nature". NBT includes tourism in natural settings (e.g. adventure tourism), tourism that focuses on specific elements of the natural environment (e.g. wildlife and safari tourism, marine tourism, nature tourism), and tourism that is created to protect and conserve natural areas (e.g. national parks) (Hall & Boyd, 2005).

NBT has become large and growing global industry. It is dependent upon the attributes of the natural environment and it mainly occurs in parks and protected areas. It is built upon two fundamental components: (1) appropriate levels of environment quality, and (2) suitable levels of consumer service (Eagles, 2002). The primary attractions for NBT are national parks, wildlife reserves and other protected areas. Commonly, those natural resources are government owned as with the case of Rila National Park.

1.2.2. Demand for NBT as Willingness to Pay

According to Laarman & Gregersen (1996), national parks like Rila National Park, are valued for their existence and their use values. For example, the demand for their preservation can be explained by their existence values while their use values reflect the demand for visiting them. In general, scholars explain the choice to visit or not to visit a particular NBT site by the individual's willingness to pay (WTP). This term represents the money that a tourist is willing to pay for a given NBT attraction in relation to the alternative use of his/her income. WTP varies among individuals with respect to their personal characteristics, income, education, occupation, demographic aspects and psychographic profiles. Another factor that influences WTP is site attributes or the so called "qualities" of the site. These attributes consists of specific attractions and infrastructure factors and can influence visitor's behavior. For example, if we consider Galapagos Islands and the Serengeti Plain with their unique amenities, they will posses very high WTP. However, other more common NBT sites, which lack the uniqueness of the above mentioned nature-based resources and thus have several alternatives providing similar experience will have lower WTP (Laarman & Gregersen ,1996).

1.3. The Equity-Efficiency Trade-off

The relation between equity, which in economics is understood as redistribution that aims to reduce inequalities of income and wealth, and efficiency which has to deal with the maximum production that can be obtained given the resource available, is an issue of high importance in economic theory. The research literature there is an indications that there exists an equity-efficiency trade-off where some individuals choose efficiency, while others equity. In situations where such trade-off exists, the question is how best to address it. However, it does not seem to have a straightforward answer. Often it is impossible to perfectly separate equity and efficiency

considerations in welfare economics (Dietz & Atkinson, 2010). More (1999), argues that this problem is somehow socially inherited due to the fact that the economic institutions emphasize efficiency which creates inequity by rewarding people differentially, while at the same time the social institutions tend to emphasize equity.

In his book 'Equality and Efficiency: The Big Trade-off', the famous economist Arthur Okun present probably the best-know discussion of the trade-offs between equity and efficiency. He argues that the conflict between equality and economic efficiency is inescapable and that public policy often must make the difficult compromise between the two (Blank, 2002).

Further on, Moore (1999) proposes that on one hand a fair system may be less efficient; it may allow everyone in, but at the cost of producing crowding and other similar negatives. On the other, an efficient policy may limit use, but exclude those who lack the financial resources to afford to pay fee.

1.3.1. Equity

Public land management and park agencies in democratic states are required to ensure that the provided recreational opportunities are available equitably. Even though this may not be a legal requirement, in most of the cases it is a political will. However, equity is elusive concepts since every social group may have widely differing conceptions for that term (Buckley, 2003). Some individuals argue for equity in principle, in a legal sense, while others argue for equity in practice. Especially equity in practice is very difficult to achieve and may require active measures to counteract socioeconomic differentials. In his work Buckley (2003), rise several important questions about equity in the context of outdoor recreation. Those are:

- Equity in principle between individual citizens: should what's available to one be equally available to all, at least nominally?
- Equity in practice between socioeconomic groups – should people with lower income have equal chance to enjoy public parks, even if they have little or no ability to pay any fees?
- Equity between citizens and foreigners – is it appropriate the foreign visitors have to pay higher user fees? Should this practice still apply if the area is World Heritage and thus to be nominally available to all countries equally?

- Equity between residents who live nearby and those living further away from the site in a sense that the former are likely to visit more often. So should they pay lower fees per visit?
- Equity between people of different ethnic origin, religion, etc - should people have equal opportunity to use public parks for their own preferred activities, even if these preferences are different between individuals with different social backgrounds?
- Equity between different users groups - should people have equal rights to use parks for different type of recreation event though some type have much higher impact on conservation values?
- Equity between types of visitors and more specifically between individual visitors, non-profit recreational groups and commercial tourists – should they all have the same rights and responsibilities and pay the same fees or not?

Buckley (2003) argues that some of those questions might look a little bit strange but all of them have been put forward at one time or another. In order to understand better those questions we need deeper understanding about the social equity theory. The next part provides description of that theory.

1.3.2. The Social Equity Theory

The social equity theory is a theory according to which individuals evaluate the ratio of the investments they make in exchange to the benefits they receive from it, relative to the investments allocated to their exchange partners. Further on, that theory states that there are two distinguishable mechanisms that may increase the probability of perceptions of social equity among individuals. Those two are procedural and distributive justice. What follows is a brief discussion on those two aspects (Park et al., 2009).

Procedural justice refers to the degree of involvement of an individual in the decision making process. Procedural justice influences formal characteristics of the procedures, explanation of procedures, and interpersonal treatment of individuals who participate in a decision making process. Thus, the belief is that the fairest procedures are those which promote personal participation in adjudication. In order procedural justice to occur, the visitors, both locals and

tourists, must feel that they are capable of providing a voice. That voice must allow the people who are affected by the decision to have the chance to express their views. (Park et al., 2009)

The procedural justice literature specifies a framework for procedures which has the ability to maximize social equity judgments. For example, one way to achieve social equity judgments is through voice or public participation where individuals affected by the decision have the right to manifest/propose information relevant to the decision. According to (Thibaut & Walker, 1975), even if the particular decision is not favorable for individuals, when they have the chance to express their voice (concerns), they will feel that their interests are protected in the long run and thus will recognize the process as fair (Park et al., 2009)

The other mechanism, distributive justice implies that individuals are willing to allocate rewards which correspond to the recipients' input or work contribution. Distributive justice focuses on questions such as how to reward group members with respect to their relative contribution to group performance. Individuals use social equity judgment when compare social value and benefits of the investment they make and the profits they derive from it, relative to their exchange partners (Park et al., 2009).

Another interesting aspect of distributive justice is the fact that tourists compare themselves to those possessing similar monetary resources as a reference group, according to the status attributes of gain-loss exchange. From this we can conclude that distributive justice occurs as a consequence of the acceptability of the burden of costs and benefits, and comparison between individuals who are using the same recreational area (Crompton & Lamb, 1986).

However, distributive justice theories can be distinguished on the basis of what is seen as the principle of justice. For example, according to Adams (1965), social equity theories focus on proportionality of inputs and outcomes. Further on, scholars suggests that social fairness may develop trough proportionality of inputs and outcomes as fundamental part of justice (Adams, 1965; Walster et al., 1978, Park et al, 2009). Some studies draw the conclusion that there is high probability that the concepts of social equity and price acceptability can play crucial role in determining individuals' response to user fees for outdoor recreation (Crompton & Kim, 2001; Kim & Crompton, 2002; McCarville et al., 1996, Park et. al., 2009).

In several studies was found that visitors attitude about the legitimacy of authorities is the foundation for acceptance of fees. On one hand, if individuals perceive the fees to be fair, an increased feeling of social equity may occur, which can lead to repeated purchase of leisure

service and a higher level of willingness to pay (Ajzen & Driver, 1992; Crompton, 1984; Thaler, 1985, Park et al., 2009). On the other, if user fees are considered unfair, this can provoke undesirable outcomes such as displacement, anger, vandalism, resistance to pay as well as decreased willingness to volunteer (Crompton & Kim, 2001; McCarville, Driver, & Crompton, 1992; McCarville et al. 1996, Park et al., 2009).

In the context of this thesis, procedural and distributive justice will be applied through section of the survey in which the respondents will be given the chance to express their preferences and views. Moreover, the eight scenarios of the choice experiment contain a set of conditions that varied according to three dimensions of distributive justice. These dimensions are the fee level, the access policy and percentage of fee that will go for nature conservation.

1.3.3. Efficiency

Economics is a science of efficiency - efficiency in the allocation of scarce resources in order to produce maximum possible benefit to society. When scarce resources must be allocated in some way, efficiency is used as a principle. In the context of outdoor recreation, allocation may be necessary when areas are overused and are physically deteriorating. Good examples for such phenomenon are National Parks. Issues may arise when resources such as wildlife are limited, or when park design limits the necessary sites like campsites and parking spaces. In each such case, to find a rationing mechanism that is both fair (equitable) and efficient can be very challenging problem. These difficulties occur, because as mentioned earlier, there is inevitable trade-off between equity and efficiency.

Bosselman et al., (1999) argues that an efficient system is one that produces enough value for the effort put and the result is considerable economic benefit. According to Bushell & Eagles (2007) the economic welfare of members of society will be improved when scarce resources are used for those activities that give the best return to their private or public owners, as opposed to other activities. Moreover, in order economic efficiency to be achieved, the income earned from using a certain resource in a particular way must be greater than the income that is given up from not being able to use this resource for some other purpose (Bushell & Eagles, 2007).

Therefore, an efficient allocation of any resource is allocation that maximizes the total net benefit that can be generated by the available quantity of resource (Tsur, 1995). Allocative efficiency is related to the concept of Pareto optimality and denotes that it is not possible to reallocate

resources, for example by producing more of one thing and less of another, without making someone worse-off. This is the result of economic efficiency and from consumer maximizing their own satisfaction and implies maximum output from given inputs and maximum consumer satisfaction from that output (Tribe, 1999).

1.4. The Free Market and Users' Fees as Instrument for Economic Efficiency

A considerable question in modern economics involves the appropriate degree of reliance on measures such as user fees for publicly provided goods such as health, education and other social services (like outdoor recreation) and the use of the private sector for the provision of these services. The defenders of user charges and greater privatization claim that these will conserve scarce public funds and will promote efficiency in the sense of cost-effectiveness and greater responsiveness to consumer preferences (Birdsall & James, 1990).

In the context of public recreation, scholars claim that fees have the potential to: 1) recover costs and provide revenues to improve quality; 2) allocate recreation resources efficiently, lowering congestion and its effects by shifting use among sites; 3) stimulate the production of recreation opportunities by preventing unfair competition with the private sector; 4) provide a comprehensive index of relative recreation preferences to assist the process of resource allocation across programs; and 5) promote equity by shifting the burden of paying to those who actually use the recreation resources (More, 1999).

In his work, More (1999) explains that when prices change according to supply and demand, individuals adjust their preferences by purchasing those goods and services according to the utility they acquire and their ability to pay. Thus the argument from efficiency is based on the idea that free markets are the most efficient means of allocating scarce resources. For example, to spend the night at a camp site may be worth \$25 to a family that likes camping, but only \$5 to a family with marginal interest in this leisure option. So if the current price is set at \$15 per night, only the first family will participate. In this way, pricing will ensure an efficient allocation of resources, distributing them to people who value them the most. In the case when the government subsidizes camping and other forms of outdoor recreation with tax funds, providing it to a little or no cost to tourists, the system of demand, supply and price will not function properly. As a consequence when both interested and less interested families may participate and undesirable results such as site deterioration, crowding, and experience degradation will occur. Further on,

government subsidies decreases the incentives to develop private facilities because the private business must recover all the costs. (More, 1999, p.229)

However, the opponents of users' fees argue that they rely on ability to pay as rationing criterion, and thus their implementation into public service will have negative distributional effects that are likely to outweigh any efficiency gains. With respect to outdoor recreation, Moore (1999) argues that charging for the use of public areas and facilities takes them further apart from the reach of the working class and creates questions about the legitimacy of public-sector management. He concludes that fees may increase inequity instead of creating efficiency.

The research made, indicates that higher fees would have a discriminatory impact on low-income users and that the potential revenue-maximizing fee would exclude from the market a significant proportion of the present users of national forests in the USA (Reiling et al., 1992; Teasley et al., 1994). In a study about user fees, equity and the benefits of public outdoor recreation services in Finland, the authors found that low fee levels decrease recreation visits among lower-income users, whereas high fees reduce the welfare level of higher-income users in particular. Further on, they found that according to the income elasticity of willingness to pay for recreation services, public provision of recreation benefits lower-income groups more than higher-income groups (Huntala & Pouta, 2008).

As mentioned previously, it is out of the scope of this thesis to make general conclusions on how we can balance equity and efficiency.

1.5. Pricing strategies for NBT

Since this work proposes pricing as a tool for achieving economic efficiency with respect to NBT, it is useful to be familiar with some of the most common pricing strategies in that form of tourism.

According to Laarman & Gregersen (1996) when developing a strategy how to set entry fees, policy makers must jointly consider pricing objectives and the information about visitors' WTP for specific site. They argue that fair fees reflect ability to pay and payment in proportion to the benefits received while efficient fees reflect payment in proportion to the cost of management and administration. It has been suggested that the strategy should change through time as the level of demand goes up or down or/and as the administrators and park managers acquire experience

with the different types of fees. What follow is a brief review of most commonly used pricing strategies in NBT discussed in (Laarman & Gregersen, 1996):

1) *Token charges*. Those are fees are below supply cost and do not deter use. The problem associated with such fees it that they are not able to generate significant revenue. By using such pricing policy, park manager may collect data (e.g. on visitors numbers, periods of peak use, etc.) which can be useful for additional analysis.

2) *Going-rate charges*. According to this principle the price for accessing certain NBT amenity should be equivalent to the charges used of comparable attraction after adjustments for differences in site quality, travel costs, visitors' income and other demand factors. This pricing strategy is regarded as market-oriented. However it can be pretty difficult to implement such kind of policy because of the uniqueness of most of the NBT attractions. Another negative aspect of going-rate charges is that in the public sector such market-oriented pricing is not common. Due to that fact such fees may be inefficient when it comes to regulating supply and demand.

3) *Cost-based charges*. As their name implies, those are charges which are set at level which recover the operational costs. However, there are some difficulties with this approach because sometimes it can be impossible to have a complete cost accounting for a specific NBT attraction.

4) *Fees, taxes and contributions*. There are various types of fees and charges for access to and use of NBT sites (for more details see Appendix B, Table 1) (Laarman & Gregersen, 1996).

1.6. Background Bulgaria

Bulgaria has a rich history and internationally renowned nature and culture. In the rural areas a conservation ethic and cultural identity is well developed. The country is situated at a crossroads between Europe and Asia and contains nine World Heritage sites. It has abundant cultural, historical, and religious resources dating back for more than 5000 years. Bulgaria accommodates high-mountain ski resorts, beautiful beaches and great number of wild and undeveloped mountains and rural areas for nature and adventure seekers.

The two predominant sectors in the Bulgarian tourism industry are *mass tourism*, which in general is focused on the *sun/sea* and *skiing* tourism. They are based on high volume/low value programs, and *specialized tourism* based on niche markets with increased focus on high end/high price consumers.

During the years, Bulgarians have developed a distinct tradition of outdoor recreation characterized by simplicity, compared to the more commercialized and specialized outdoor recreation activities in North America and Continental Europe. The right of public access to the countryside and the mountains is a basic element in the outdoor recreation tradition in Bulgaria. Outdoor recreation and more passive enjoyment of nature are indispensable part of the lifestyle of Bulgarians. The right of public access grant every person the right to move and stay in the natural environment. Activities like hunting, fishing, picking berries and mushrooms are still popular in Bulgaria, although hunting and fishing are not anymore allowed to everyone. The most popular activities for the general population in the nature are skiing, hiking, walking and cycling (Bulgaria Travel website).

1.6.1. Tourism in Bulgaria

Tourism in Bulgaria is on the rise during the last decade. Revenues from tourism (except transportation) reached 2.533 billion euro in 2008, representing and 10.8% increase from 2008. Between 2007 and 2008, international tourist arrivals increased by 12.7%, to 5,779,823. In 2008, the largest share of visitors came from Romania. In 2008, 996 716 Romanian tourists visited Bulgaria, up by 32.9% from the corresponding period in 2007. On second spot is Greece with 843,543 tourists, which represents a slight increase by 2% compared to the previous year. Germany keeps its third place in the ranking with 363,671 tourists, an increase of 11.6%. UK and Russia follows with 363,671 and 291 193 tourists respectively. In 2008, the largest increase in visitors was from Macedonia, up by 37.9% from the previous year to 216 6004 tourists. One group that came less was visitors from Turkey, whose number decline by 21.7% to 210 079 tourists (Bulgarian National Tourism Agency website).

The main reason for the recent growth in Bulgarian tourism is the increased investment in past years from both the Government and the private sector. Tourism is the fastest developing sector of the Bulgarian economy and as tourism revenues increases; this investment is likely to continue. However, the focus of promotion and investment appears to be shifting into another direction. In general, the greatest share of investments from both the private sector and the government has been into large-scale developments in the Black Sea and the country's major ski resorts (Bansko, Borovetz, Pamporovo). As a consequence 75% of the specialized tourist infrastructure is concentrated in 7 regions which cover 8-10% of the territory of the country. The

big beach and ski resorts are turning more and more into cities in which it is difficult to find conditions for peaceful relaxation, which in turn is one of the main needs of tourists. In order to solve this problem, now the government is placing growing emphasis of ecotourism (Bulgarian National Tourism Agency website).

1.6.2. Rila National Park – Study Area

Rila National Park is the largest national park in Bulgaria and among the largest of Europe's parks with an area of 81,046.0 ha. The Park includes forests with total area of 53,481.0 ha, and high-mountain meadows and pastures spanning 27,565.0 ha. It is located about 100 km. south of the capital of Bulgaria - Sofia, in the central and highest regions of the Rila Mountains. The Park accommodates rare and endangered wildlife species and communities, self-regulating ecosystems of biological diversity, as well as historic sites of global cultural and scientific significance.

Rila National Park in its current form was established on February 24, 1992 with the aim to preserve the natural heritage of the Rila Mountains as well as the local culture, traditions, and livelihoods linked with the area. The National Park Directorate which is a regional body under the jurisdiction of the Ministry of Environment and Waters manages the Park.

It is one of the largest and most valuable protected areas in Europe—listed as Category 2 by the World Conservation Union. The Park and all four of its nature reserves are on the UN List of Representative Protected Areas. The government aim is to implement new strategies to develop the park in order to attract more visitors. In order to attract more international as well as domestic visitors, the Bulgarian government intends to build more facilities in the park. It is believed that these facilities can bring positive influence on the awareness of conserving the place. There are some issues connected with such kind of development which worries many Bulgarians because the addition and creation of new facilities in Rila National Park can affect the balance of the ecosystem of the place. Negative effects like land erosion, deforestation and water pollution may be the price paid (Rila National Park website).

CHAPTER 2 METHODOLOGY

2.1. Conjoint Analysis and Choice Experiments

This thesis develops and tests a conjoint-based choice model which aims at understanding the preferences of tourists with respect to equity and efficiency, and how they are affected by changes in the levels of a specific park attribute. In order to do this, we need a framework to map their choices into preferences. In their works Luce, (1959); Marschak, (1960); McFadden, (1974) suggested that random utility models provide such framework. However, it is still acknowledging that such surveys cannot include all factors that affect respondents' decisions.

In the field of marketing, most of the companies are interested in how consumers will react to new products introduced to the market. Due to that fact, the goal of a marketer is to find out what makes a given product attractive, what price consumers are willing to pay for it, and which characteristics of products or services are important to potential buyers. Thus tourists' response to price has been an important research topic for many years. For more detailed review on the topic see Schroeder & Louviere, (1999); Crouch (1995), (1996); Williams, Vogt, & Vittersø, (1999).

In recent years, modeling and data collection methods have advanced. As a consequence, new approaches for understanding consumers preferences have been implemented successfully by academics and practitioners (Dellaert & Lindberg, 2003). Such a technique is conjoint analysis and nowadays it is widely applied in marketing sciences. Conjoint analysis is a technique which measures preferences or utilities of consumers for certain characteristics of products or services (Haaijer, 1999). According to scholars, conjoint choice models assume that one can examine consumers' choices for hypothetical choice alternatives, which are described in terms of attribute profiles. The goal is to get a preference function and a choice model simultaneously. In order to create such models, an experimental design must be constructed. In that design the attributes of interest must vary according to the principles of the design of statistical experiments so that the necessary and sufficient conditions to estimate the choice model of interest are satisfied. Thus the development of a conjoint model of portfolio choices requires 1) the specification of a choice

model that allows us to examine and estimate the influence of the various components of recreational parks and 2) and acceptable design strategy to result in an experimental design that allows one to estimate the previously mentioned models specification (Dellaert et al., 1997).

During the last decade a stated preference method called “Choice Experiments” (CE) has become very popular for evaluating environmental assets. However, the term conjoint analysis is broader in coverage than CE, because the former includes ranking exercises. The (CE) technique is a variation of conjoint analysis. CE is an application of the characteristics theory of value (Lancaster, 1966) in combination with random utility theory (Thurstone, 1927; Manski, 1977, Hanley et al, 1998). It also shares a strong link with the random utility approach to recreational demand modeling through the use of revealed preferences data. In CE respondents are asked to select one choice they prefer the most between different bundles of (environmental) goods and thus the method is much closer to real marketplace. One of the main advantages of this method is that it allows for analyzing hypothetical situations in cases where no real market exists (Hanley et al.1998).

2.2. Theory

As mentioned before, the CE method is an application of the Lancasterian consumer theory (Lancaster 1966), in combination with the random utility theory (Thurstone, 1927; Manski, 1977, in Hanley et al, 1998). The former theory proposes that utilities for goods can be decomposed into separable utilities for their characteristics or attributes. The random utility theory serves as the basis of several models and theories of consumer judgment and decision making in psychology and economics (Adamowicz et al. 1998)

Thurstone (1927) explained the dominance judgments among pairs of offerings using the random utility theory. He argues that consumers should try to choose the offerings they like best, subject to constraints (e.g. time, income, etc.) as in standard economic theory. Nevertheless, consumers may not always pick what seems to be the most preferred alternative. According to Adamowicz et al., (1998), if this is the case, a random element as a component of the consumers' utility function can be introduced. The aim of this element is to explain such kind of variation in consumers' choice. In random utility choice model, the utility of each alternative i , U_i is represented as:

$$U_i = V_i + \varepsilon_i, \quad (1)$$

where U_i is the unobservable, true utility of alternative i ; V_i is the systematic component of utility; and ε is the above mentioned random component also called error term (Adamowicz et al. (1998).

The presence of this random component allows the researcher to make probabilistic statements about consumers' behavior. It is expected that an individual will choose the alternative that gives maximum utility and so the probability that a consumer will choose the i -th alternative from some set of competing offerings, say C , can be expressed as:

$$P(i|C) = \Pr[U_i > U_j] = \Pr[(V_i + \varepsilon_i) > (V_j + \varepsilon_j)], \forall j \in C. \quad (2)$$

The systematic component of utility V_i is that part of product attractiveness that can be related to product attributes. In order to measure it accurately we must carefully identify, measure and include as many of the key factors that influence consumer's choice as possible. Once identified, we have to decide how these variables combine to drive systematic preferences. This can be done by proposing a utility function which represents the formal relationship between the explanatory variables and choice behavior (Adamowicz et al., 1998). The systematic component can be expressed as a linear function of the explanatory variables:

$$V_i = \beta'x_i \quad (3)$$

where β is a k -vector of utility coefficients associated with a vector x of explanatory variables (including prices, income and other attributes of the alternative and the interactions between these elements). Thus equation (2) can then be expressed also as the following:

$$P(i|C) = P[(\beta'x_i + \varepsilon_i) > (\beta'x_j + \varepsilon_j)], \forall j \in C, \quad (4)$$

Equation (4) shows that the probability that a consumer will choose offering $i \in C$ equals the probability that the combined systematic and error components of offering i are higher than the systematic and associated error components for all other competing offerings. Equation (4) also

shows that our goal is to identify and estimate the β vector associated with the variables which can explain the choice made (Adamowicz et al., 1998).

According to Adamowicz et al., (1998), choices may differ systematically from individual to individual. So in order to account for as many of these individual differences as possible, the set of explanatory variables can be expanded to include individual difference (i.e. demographic and psychographic) measures z , with associated vector of coefficients g . These individual difference measures may be hypothesized to influence utility levels via intercept and/or slope coefficients in the b vector.

In this thesis the respondents had to make a choice between 3 options. Those are hypothetical Park A, Park B and Current Rila National Park. If assuming that errors are independently and identically distributed (IID), the probability that a respondent will choose one of the parks scenarios can be estimated by using the multinomial logit model (McFadden, 1974):

$$\text{Prob}(i) = \frac{\exp(\mu V_i)}{\sum_j \exp(\mu V_j)}$$

where μ is a scale parameter usually assumed to be 1, implying constant error variance.

However for simplicity, the analysis of respondents' choices been expressed as a binary choice of Park A versus the other two parks (Park B and current Rila National Park). In that case, once again if it is assumed that the random error components in the utility function are (IID) as Gumbel variates, the logit model arises. The binomial logit model has the following closed form expression for the probability function, if the systematic utility of the other option is arbitrarily set to zero:

$$\text{Prob}(i) = \frac{\exp(\mu V_i)}{1 + \exp(\mu V_i)}$$

where μ is a scale parameter inversely related to the standard deviation of the Gumbel error distribution underlying the model (Dellaert & Lindberg, 2003).

2.3. Choice Experiments and Environmental Assets

Due to the fact that environmental assets are not transacted in real markets, there is no possibility to observe a demand curve based on market prices and thus special methods must be used to estimate the demand for such kind of non-marketed goods. According to Adamowicz et al. (1994), there are two categories of methods for valuing environmental amenities: indirect and direct. On one hand, indirect method (e.g. travel cost method), observe the actual choices made by individuals to develop model of choice. On the other, direct methods ask consumers to indicate how much they would be willing to pay or accept for a change in an environmental amenity.

In order to justify the method used in this study we must have in mind that currently there are no entrance fees in Rila National Park. Due that fact it is not suitable to use method based of revealed preferences that rely on actual behavior. Stated preferences methods are much more useful because they rely on consumers' response to hypothetical scenarios. One disadvantage of direct methods is the hypothetical nature of the questions and the fact that actual behavior is not observed. However, it is believed that such methods are the only viable alternative for measuring non-use value. They are commonly used to elicit values in cases in which the environmental quality change involves a big number of attribute changes (Adamowicz et al. 1994).

CE is stated preference approach and recently has been widely used for evaluating environmental assets. According to Hanley et al. (1998), CE has some favorable features, such as: (1) ease of estimation of the values of the individual attributes that make up and environmental good; and (2) CE give the chance to estimate marginal values of attributes that may be difficult to identify by using revealed preferences data because of co-linearity of lack of variation. For further discussion on the applications of CE compared to other environmental valuation methods see Adamowicz et al. (1994), Boxall et al. (1996), Hanley et al. (1998).

2.4. Previous Application of Choice Experiments to Nature Based Tourism

CE has been widely used to analyze preferences for environmental resources and to estimate the value of non-market goods and services. Adamowicz et al. (1994) used CE to evaluate tourists' preferences for alternative flow scenarios for the Highwood and Little Bow rivers in Alberta, Canada. In that study choice sets were constructed for two river types (standing water and

running water) containing eight attributes common to both types (terrain, fish size, water quality, etc.). Further on, three additional attributes were given for standing water and two for running water. All attributes had either four or two levels. The obtained results showed that attributes such as water quality and fish catch played a significant role in determining trip destination. It was found that consumer surplus per trip (use value) varied from CDN \$8.06 to \$4.33.

In another similar study, Boxal et al. (1996) used CE as well as CVM responses to compare the welfare estimates from both methods. The study examined recreational moose hunting site in Alberta. The attributes included in the CE design were distance from home to hunting area, quality of road access, access within hunting area, encounters with other hunters, forestry management operations in the area, and moose population. The results obtained from the CE showed that all attributes except road quality and forestry management operations were significant and of the expected sign. The author argued that one serious advantage of CE over CVM is the ability to better capture substitution possibilities, and combine wider range of environmental quality changes.

In their work Adamowicz et al. (1998b) suggested alternative scenarios for the wildlife management in Alberta, Canada. They estimated the value of changes in the caribou population. That was the first time when CE method was used to estimate non-use (passive use) values. Again, both CE and CVM responses were collected. The CE design of the alternative woodlands was characterized by five attributes: caribou population, area of wilderness, recreational restrictions, forest industry employment and provincial income tax level. The results obtained by the CE showed that all attributes except employment were significant with the expected sign. In that study the quadratic model reported better results compared to the linear model since the quadratic terms all had higher t-statistics.

Hearne & Salinas (2002) applied CE in order to simulate potential development of eco tourism in Costa Rica and to identify tourists' preferences in Costa Rica for development of such tourism. They developed hypothetical tours of the Braulio Carrillo National Park. The CE was built on five attributes: price, information, infrastructure, view and use restriction on site. Following the concept of CE each attribute was defined by two or three levels. The obtained results showed that there exists a difference between national and international tourist with respect to their preferences for the five attributes and also for the possible developments in the National Park.

The study demonstrated that CE can be a useful tool for analyzing users' preferences and can be used to draw implications for the management of protected areas in developing countries.

Despite the wide use of CE for analyzing preferences for environmental resources, to date, the work by Park et al. (2009) seems to be the only conjoint related study to investigate the perception of equity and price acceptability with respect to NBT. In this study, the authors used conjoint analysis to investigate the decision making process that predicts social equity judgments and price acceptability of user fees for activities such as camping in protected areas and outcome of the variables. In this study of Wasatch-Cache National Forest in northeastern Utah, the results showed that the extent of public input was the most important predictor of social equity judgment at $p < 0.01$. It was found that the second highest part-worth coefficient was obtained in support of low user fees (a hypothetical scale of \$3.00 vs. \$8.00). Moreover, the magnitude of the part-worth coefficients for price acceptability showed that the highest part-worth coefficient was a fee level of \$3.00. The next highest part-worth coefficient was in support of revenue being used to maintain the quality of the site. Finally, it was also reported that that "extensive public input" was an important predictor of social equity.

CHAPTER 3 DESIGN OF THE CHOICE EXPERIMENTS

3.1. Setting Attributes and Levels

Choice experiments are designed in order to measure consumers' preferences for hypothetical alternative scenarios. Those scenarios approximate real life situations in the context of the specific experiment. In each scenario there exist a choice alternative which is defined in terms of levels of selected attributes. Thus the researcher must carefully consider the proposed attributes and attribute levels in order not to exclude some relevant attributes and to avoid irrelevant or unrealistic descriptions (Hensher, Rose, & Greene, 2005).

Further on, the design phase is highly important for the successful implementation of CE. The process of developing the choice model in this thesis followed the steps used by Schroeder & Louviere (1999) in their study about the impact of users' fee at public recreation sites. The core attributes and their levels were selected with the help of several Rila National Park employees who had deep understanding and knowledge about the recreational opportunities in the Park. Moreover, in order to be sure that those attributes were realistic and relevant to potential visitors, a focus group was carried out. The people who took part in it were 8 tourists; highly involved in outdoor recreation; between 18 and 55 years old. Finally, several previous research studies relevant to the topic such as those of Adamowicz et al. (1998b), Hanley et al. (1998), Hearne & Salinaz (2002), Lindberg et al. (1999) were used for building the appropriate econometric model. At the end of this process the measurable attributes associated with the hypothetical park scenarios were determined. Those attributes are: 1) **type of park**, which could be either nature-base or nature in combination with man-made facilities; 2) **level of congestion or "crowding"**, which involves encounter with other tourists in different situations; 3) **the access policy** associated with the park; 4) **the level of the entry fee** and finally 5) **the percentage of the fee that will be spend for nature conservation**. (For more detailed description of the attributes and their levels see Table 2)

Table 2: Attributes and Attributes Levels of Park Scenarios

<u>Park characteristics</u>	
<u>Attributes</u>	<u>Attribute Levels</u>
1) Type of park	Nature and man-made facilities Nature-based
2) Crowding	Lots of traffic, very crowded, no privacy, quite noisy Little traffic, very few people, quiet, many places for privacy
3) Access policy	50% discount for nationals Fixed entrance fee
4) Entry fee (per day)	2 Euro 6 Euro 10 Euro 14 Euro
5) % from entry fee for nature conservation	0% 50%

3.2. Access Policy as Determinant of Equity or Efficiency.

The main assumption in this study is associated with the attribute for access policy to the park. It has two levels: 1) 50 % discount for nationals and 2) fixed entrance fee code in the data with 0 and 1 respectively (information about the coding of each attribute is presented in chapter 4). I've made the following assumption:

Individuals who have stronger preferences for equity will pick park scenario with fixed entrance fee while those who have preferences for efficiency will choose park that offers 50% discount for national tourists.

This assumption might be arguable because of the complexity of the concepts of equity and efficiency and the great number of factors that play role in their determination. This statement is to certain extent in line with previous research on user fee and pricing policies in NBT (Laarman & Gregersen ,1996; More, 1999; Lindberg, 1991). More (1999) argues that fees for public recreation allocate resources efficiently, relieving congestion and its effects by shifting use among users. Further on, Lindberg (1991) suggests that multitier fee structure, in which nationals pay less than foreign visitors, allow more revenue to be generated without denying citizens access to their natural heritage. As discussed in chapter 1, in the research literature, price-based allocation mechanism is proposed as an efficient strategy for allocating access to public goods. However, there is no previous research to support exactly this assumption. Nevertheless, I find it logical and in the pre-test of the survey through a discussion in a focus group I found support for it. Due to that fact, I decided to implement it in this thesis since I saw an opportunity to test something which wasn't tested before.

3.3. Efficient Choice Design

As explained before, choice experiments ask respondents to make discrete choices in each of a number of designed scenarios that describe different hypothetical choice options. In this thesis, the choice options are possible outdoor recreation parks described by the site-selection attributes

which were identified after several months of research. The selected 5 attributes and their levels are used as the foundations on which the set of alternatives to choose from and the choice sets in which the alternatives appear are constructed (Albaladejo-Pina & Diaz-Delfa, 2009).

This is done by conceptualizing the park choice design as a problem in which individuals must choose between visiting one of the two hypothetical parks propositions or to choose to visit “current Rila National Park” which can be considered as base alternative (Adamowicz et al., 1997). Due to that fact, the choice scenarios are of a constant size (3 alternatives) and the scenarios depicted within them are generic and unlabelled (Louviere, Hensher, & Swait, 2000). As a consequence, each choice option possesses no more information than that provided by its attributes. The third option “current Rila National Park” was introduced in order to make the choice experiment more realistic as the respondents were not forced to make a decision about a park scenario when one of the two alternatives was not desirable (Albaladejo-Pina & Diaz Delfa, 2009). Haaijer (1999) argues that when conducting a choice experiment the decision of whether to include the so called “base alternative” is always an issue of serious concern. Such alternative can be described as an option which always shows up in the choice set. It has its' pros and cons. Among the benefits of including the base alternative are: (1) it can make the choice decision more realistic; (2) it is possible to scale the utilities between various choice sets. Some of the disadvantages are: (1) the base alternative provides no information about preferences for attributes of the choice alternatives; and (2) respondents have the chance to avoid difficult choices (Haaijer, 1999). In this work, the base alternative is the option to choose “Current Rilla National Park”. It gives the respondents the opportunity to choose the already existing Rila National Park with its' current recreational possibilities. By making this choice, the respondents will explicitly state that they do not want any changes to be made.

The possible park scenarios were described by 5 attributes and each attribute was represented by two or four levels resulting in a $2^4 * 4^1$ factorial design. This complete factorial design for the attributes and levels comprises 64 combinations (Crouch & Louviere, 2004). In practice it was not feasible that a respondent can evaluate all 64 choices when revealing his/hers preferences. This number had to be reduced without loss of data goodness. As an alternative solution to minimize the loss of statistical information, fractional factorial design was utilized to systematically select an orthogonal fraction of the possible combinations, resulting in 16 choice

sets. This design was a one fourth fraction of all possible combinations and allowed for estimation of all main effects; the interaction of type of park and access policy. (See Table 3)

Table 3: Fractional Factorial Design

	Price Level	Type of park	Access Policy	% from entrance fee for nature conservation	Level of crowding
1	1	1	1	1	1
2	1	1	2	2	2
3	1	2	1	2	2
4	1	2	2	1	1
5	2	1	1	2	2
6	2	2	2	1	1
7	2	2	1	1	1
8	2	2	2	2	2
9	3	1	1	2	1
10	3	1	2	1	2
11	3	2	1	1	2
12	3	2	2	2	1
13	4	1	1	1	2
14	4	1	2	2	1
15	4	2	1	2	1
16	4	2	2	1	2

After the above described procedure, each choice set is “folded over” to make an additional 16 unique choice sets. As a consequence, 32 combinations became available for the survey. According to Louviere, Hensher, & Swait (2000), this kind of method of design constructions can be used to orthogonalize the main effects to unobserved linear-by-linear two-way interaction. The resulting 64 park combinations were randomly assigned to two survey versions of 16 scenarios under the criterion that all levels for each attribute should appear at least once within each questionnaire version. According to (Crouch & Louviere, 2004) another important criterion for such assignments is that the attribute correlations within each block should ideally be zero.

3.4. Attitude Questions

After the completion of the choice experiment, the respondents are asked to answer a set of several additional questions. Those questions are not relevant to the CE but provide important information about the profile of respondents. The first set of questions (Q1- Q6) gives information about their interest in NBT, their past behavior with respect to NBT, reasons for visiting Rila National Park, and their attitude towards the conservation of the Park. Initially my idea was to use those questions as filters in order to divide the sample into several sub-samples (e.g. people interested in NBT, visitors vs. non-visitors etc.) and then to do the analysis. However, the low sample size didn't allow such kind of testing. Nevertheless, those questions had the ability to screen for outliers in the data. Outliers are respondents who reported values that are very different from the remaining data, either very large or very small. Their presence can bias the results of an analysis. That is why they have to be filtered out.

The last question of the survey Q7 was also the most important one. The purpose of Q7 is to reveal tourists' attitude towards equity and efficiency in the context of NBT. The aim was to obtain results about their preferences using additional information beside the one from the CE. The question contains five statements measured on 5 point Likert scale. The definition of each statement was made according to several previous studies on equity and efficiency in NBT (More, 1999; Lindberg, 1991; Wick & Crompton, 1986). (For full version of the questionnaire please see Appendix C)

3.5. The Choice Instrument and Logistics of the Survey

Strong budget limitations imposed restrictions on the possible ways of collecting the data. Mail or telephone surveys were not feasible because of their high costs and complicated logistics. They also have several disadvantages such as very high non-response rates and difficulties in understanding the hypothetical scenario and questions.

Face to face interviews and self administered surveys were identified as the only conventional and feasible way of conducting the survey.

After the choice experiment was completed, a questionnaire with information package was developed. It consisted of photographs of the most popular sites in Rila National park, general information about the mountain, the park and detailed description of the possible hypothetical new park developments. Thus the choice instrument in this study formed one part of a three-part survey. The main part of the survey contains 16 scenarios through which the respondents were guided. Each scenario describes a hypothetical park on the basis of the 5 attributes described previously. Also the base alternative “Current Rila National Park” was available for the respondents. Further collected information included past behavior as tourists (how often they have engaged in outdoor recreation, their motivation for visiting, money spend on NBT etc.) and attitudinal questions with respect to several statements which aimed to assess their preferences for equity and efficiency. Finally socioeconomic characteristics of the respondents such as sex, age, nationality, level of education, income were requested. (For the full version of the questionnaire please see Appendix C)

According to scholars, a pre-testing of a questionnaire is a necessary component of the research program. Due to that fact a pilot test of the survey was carried out in May and July 2009. This pilot test was very useful to prove that the attributes were comprehensible, good and clearly presented and overall relevant to the tourists. It also indicated that for respondent would not be so exhaustive to complete 16 scenarios and that this number of scenarios would have minimal negative effects on the survey response rate. During the pre-tests of the questionnaire it was found that it would take about half an hour to interview a single person.

The pilot test also confirmed that the structure of the survey had the ability to generate some expectation among respondents that the information provided can be used in making decisions in some fashion. If the respondents view the process as entirely hypothetical or useless, then their responses will not be meaningful in any economic sense (Carson et al. 2000).

3.6. Data Collection

The data collection was done in the months of June-August 2009 and July-August 2010 in Rila National Park. Since I wasn't able to afford professional interviewers I needed the help of as many people as possible for the implementation of the survey. Mainly my personal friends agreed

to play the role of interviewers. I explained them the idea of the study, the concept of CE survey and the purpose of the questions.

My aim was to send interviewers to as many locations as possible during the weekends. The main interview spot was based at the most visited place – The Seven Rila Lakes. We asked tourists who were resting near the lakes to answer to the questions.

The process followed two steps: first, the respondents were informed about the nature of the study. After they understood the purpose of the study, the problem and the hypothetical scenarios, the choice sets were presented to them.

My aim was to collect data from at least 180 tourists in Rila National Park. However, this number proved to be unrealistic because of several reasons. First of all, there were too many Bulgarian tourists and unexpectedly low number of foreigners. Since my aim was to see the preferences of both national and international tourists this was a significant issue. Moreover, the interviews turned out to be psychologically exhausting for the interviewers. Many respondents initially rejected the hypothetical scenario and the whole idea of paying entrance fees. Further on, there were many large groups (more than 20 tourists) but I decided to interview not more than 5 people from one group in order to avoid overrepresentation. Finally, we approached more than 200 visitors of which 110 finished their questionnaires.

CHAPTER 4 DATA ANALYSIS AND DISCUSSION

4.1. General Statistics

The survey achieved moderate sample size – a total of 110 tourists, both Bulgarian and international completed the questionnaire. It had relatively low response rate, only 42.2 percents. Some of the main reasons detected for not filling in the whole questionnaire were:

- Respondents did not have substantial knowledge of English language, so they were not able to fully understand the questions.
- Respondents did not have enough time to participate.
- Respondents rejected the whole idea of the study after reading the introduction and hypothetical scenarios.
- Respondents started the interview but found some of the questions inappropriate and at some point refused to continue.

Among 110 respondents 62 (56.4%) were male and 48 (43.6%) female. The whole sample consists of people between 17 and 64 years old. The average age of respondents is approximately 32 years. Moreover 65.5% of the individuals are young people who fall in the range from 18 to 32 years. Due to that fact the age distribution is right-skewed (see Appendix A, Figure 1).

Among 110 respondents, 67 are internationals while 43 are from Bulgaria. Most of the respondents originated from Europe, only 5 were from North America. Classified by nations, Bulgarians were most widely presented with 43 respondents (or 39.1%), followed by Germany with 14 respondents (or 12.7%), The Netherlands (11), UK (9), USA (5) etc (see Appendix A, Figure 2).

The second part of the survey consists of questions which can be used for further analysis of tourists' preferences, attitude, past behavior and spending patterns with respect to nature-based tourism. These statements were developed to test their opinion about several important social aspects of NBT. The focus is put on the problems of equity, efficiency and the use of entry fee as

a tool to balance those conflicting objectives. What follows is a summary of the results on those questions.

On question 1 “Are you interested in nature-based tourism/eco-tourism?” 106 respondents (96.4%) gave positive answer while only 4 (3.6%) gave negative. These findings are consistent with the overall trend for increasing interest in NBT and shows that there is a significant potential for development of such kind of tourism in Bulgaria.

On question 2: “How many times you have engaged in nature-based tourism/eco-tourism during the last year?” the minimum was 0 and the maximum 25 times. The average number of trips related to eco-tourism for each respondent was 3.5. Further on, 74.5% of the respondents state that during the last year they were engaged from 1 to 3 times in such activities. The most common duration for a respondent is one time – 32 individuals (29.1%), while 26 individuals (23.9%) were engaged two times; 13 individuals (11.8%) – three times during the last year (see Appendix A, Figure 3).

According to the results obtained from **question 3a**), during the last year respondents spent on average 4.2 days participating in NBT. Sixty-eight of them stated that the duration of their visit was no more than 4 days, which represents 61.8% of the whole sample.

Question 3b) reveals that the average amount of money spent for accommodation during this period is 102.76 euro. This amount is significantly higher than expected. In general, Bulgarians are used to spend less money for accommodation when it comes to outdoor recreation and prefer to use campgrounds or chalets. However this higher number may be due to the fact that the traditional ski resorts in Rila Mountain are generally expensive. Compared to them foreign tourists tend to spend more money for accommodation (on average 123 euro).

More than half of respondents (55.5%) stated that they spend no more than 50 euro, while two people from the sample (1.8%) reported that they have spend the maximal amount in the sample (800 euro).

From the entire sample, 78 respondents, (or 70.9%), said that they have visited Rila National Park. The remaining 32 individuals (29.1%) have never been in the Park. Interesting fact is that from 67 foreign tourists who participated in the survey, 37 (55.2%) have been in Rila mountain before. This clearly speaks for the great potential which Rila Mountain and particularly the National Park have, not only to attract tourists with its unique natural amenities, but also to lure them to visit again.

The next table represents tourists' motivation for visiting Rila National Park.

Table 4: Reasons for visiting Rila National Park

<i>N</i>	<i>Reasons</i>	<i>frequency (%)</i>
1	Need for purity and quietness	53.6%
2	Wild nature	53.6%
3	Camping	13.6%
4	Contact of people with similar views	28.2%
5	Plant and animal observation	20.9%
6	Sports and physical fitness	31.8%

Question 6 measures respondents attitude towards nature conservation and states: *“Is it important to you that the mountain is preserved in its natural conditions?”* Where 93.6% of the respondents gave positive answers and only two of them (1.8%) gave negative. The preservation of Rila National Park in its natural conditions is very important (66.4%) or important (27.3%) for the respondents (see Appendix A, Figure 4).

Question 7.1 introduced the first statement which concerns equity. It states: *“Public land recreation is the birthright of every person and should remain free”*; in total 57 (or 51.8%) respondents stated that they ‘totally agree’ or ‘agree’ with the statement. Further on, 16.4% of the tourists who took part in this survey are indifferent about this issue and neither agrees nor disagrees. Almost one third (29.1%) rejected the idea that public land recreation should remain free. Those findings imply that most of the tourists support an equitable access to NBT, especially in the case of Rila National Park (see Appendix A, Figure 5).

Question 7.2 states: *“Fees for outdoor recreation promotes efficiency by providing a market-like mechanism to allocate resource”*. This statement was detected as a popular belief among scholars and economists and so was introduced in the survey. More than half of the respondents (58.2%) agree to some extent with it. Those who were not sure represent 22.7% of sample, while those who do not agree were 21 (19.1%) individuals for whom some other method for rationing access to nature-based resources would be more appropriate (see Appendix A, Figure 6).

Question 7.3 of the survey extends the idea of equity but also incorporates entrance fee as a rationing mechanism for access to nature resources. It states: “*A fixed entrance fee (everybody pays the same) promotes equity*”. It is one of the leading statements in this study. It was expected that individuals who support equity will prefer fixed entrance fees. As said previously, it is assumed that fixed entry fee promotes equality among park visitors. The results showed that 53.6% of the respondents agree with this statement, while 23.6% are not sure and only 22.7 % rejected the idea for achieving equitable access to outdoor recreation through fixed entrance fees. Those findings support the statement and show that respondents attitude is towards equity with respect to access to Rila National Park (see Appendix A, see Figure 7).

Question 7.4 states: “**A differentiated entrance fee (lower for nationals, higher for foreigners) promotes efficiency**” and the results show that respondents have positive attitude towards differentiated fees. On one hand 41.8% gave positive answer, from them 14 individuals (12.7%) totally agree and 32 (29.1%) agree with the statement. On the other, 19 (17.3%) individuals were not sure whether differentiated entrance fees will be able to achieve efficiency, while 40.9% of the respondents oppose charging foreign visitors more. Again it is interesting to observe what foreign visitors think about that statement. The results show that 46.3% of them think that it is appropriate to be charged with higher fees (see Appendix A, Figure 8).

Question 7.5 introduced the question whether “*Foreign visitors should pay more since they do not pay local taxes and thus do not support the park maintenance*” This is an arguable statement, since foreign visitors may not pay local taxes, but they contribute to the host country economy by spending money for many different things while being on vacation. However, a little bit more than half of the respondents (51.8%) agree to some extent with this idea. From them, 23.6% totally agree, 28.2% agree that foreign visitors should pay more. This is interesting finding and could be explained with the fact that charging foreign tourists has been common practice at many of the Bulgarian summer and winter resorts in the past. Another explanation could be the fact that in general the average income of a Bulgarian citizen is much lower than the income of, for example, a Western European tourist and since Bulgarians are proud with their national heritage and natural amenities they are willing to accrue benefits from them. Those who are not sure about the fairness of this practice represents 17.3% from the sample, while 30.9% do not support the proposed practice. From those who believe that charging foreign visitors is

appropriate, 10% totally do not agree with this proposal and 20.9% do not agree. Again a surprising finding is that 52.5% of the foreign visitors express support for the statement, while 22.4% are indifferent and only 25.4% think that this is could not be an appropriate practice (see Appendix A, Figure 9).

4.2. Model

The logistic regression can examine the relation between a categorical or qualitative variable and one or more predictor variables (Peng & So, 2002). Moreover, it has the ability to incorporate different types of independent variables, such as the dichotomous and continuous variables used in this analysis. Thus a binary logistic regression model was estimated to evaluate the weight coefficients of park attributes. The binomial logistic regression coefficients estimate the impact of the explanatory variables on the probability that the respondent will pick park scenario A. In order to estimate the probability of choosing alternative A from the choice set $\Phi(A, B, C)$, the collected data was analyzed with the statistical software package SPSS 17.0. Based on the Lancasterian theory and the random utility theory discussed in Chapter 2, the deterministic component of the utility function for subset j (V_j) is assumed to be linear and can be expressed in the equation:

$$V_j = \beta_0 + \beta_1 (\text{type of park}) + \beta_2 (\text{crowding}) + \beta_3 (\text{access policy}) + \beta_4 (\text{entry fee}) + \beta_5 (\% \text{ for nature conservation}) + \beta_6 (\text{age}) + \beta_7 (\text{income}) + \beta_8 (\text{nationality}) + \beta_9 (\text{gender}) + \beta_{10} (\text{education}) + \beta_{11} (\text{price *price}) + \varepsilon$$

Where β_0 is constant (intercept); β_1 through β_{11} are estimated coefficients; ε is the IID normal distributed random error component that captures the error in estimating the function V.

As discussed in chapter two, it is possible to use the logistic model to estimate those coefficients and then the probability of choosing given alternative can be estimated through:

$$p = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n}}$$

Where p is the probability of the event occurring, e is the base of natural logarithms, β_0 is the intercept, β_n – are the coefficients (or weights) for the explanatory variable n and X_n -are the predictor variables (Field, 2005).

In order to carry out the analysis each attribute from the choice experiment was coded and the data for it was stored into a SPSS variable. Table 2 shows the definitions of the variables and how each one was coded in the choice model.

Table 5: Variable Specification and Data Coding

<u>Variable</u>	<u>Coding Type</u>	<u>Definition</u>
Choice A	Binary	1 = if an alternative was chosen; 0 = otherwise
Type of park	Binary	1 = nature-based; 0 = nature and man-made facilities
Crowding	Binary	1 = low level of crowding; 0 = high level of crowding
Access Policy	Binary	1 = fixed entrance fee; 0 = 50% discount for nationals
Entry fee	Nominal	Fee level in Euro
% for nature	Binary	1 = 50%; 0 = 0%
Conservation		
Age	Nominal	age of respondents
Income	Interval	from 0 to 10; 0 = less than 200 €, 10 = more than 2000 €
Nationality	Binary	1= Bulgarian; 0 = foreigner
Gender	Binary	1 = Male; 0 = Female
Education	Ordinal	1= Primary; 2 = Secondary; 3 = University; 4=PhD or higher

Scholars suggest that the evaluation of a logistic regression model include the overall model evaluations, statistical test of individual predictors, validations of predicted probabilities and goodness-of-fit statistics (Peng & So, 2002).

4.3. Overall Model Evaluation

All potential explanatory variables presented in Table 4 were evaluated using the default method for conducting regression in SPSS 17.0, the “enter” method. This method places all covariates into the regression model in one block and parameter estimates are calculated for each block. According to Field (2005), some researchers believe that this method is the only appropriate method for theory testing because stepwise techniques are influenced by random variations in the data and thus rarely produce replicable results if the model is retested with the same sample.

Overall, 880 (110*8) choices were made by 110 respondents. Park scenario A received 341 (38.75%), while the remaining 539 (61.25%) went to park scenario B and current Rila National Park.

In order to test the null hypothesis that a coefficient is equal to zero, in the model for each variable are observed the Wald chi-square coefficient and the 2-tailed p-value in the significance column (Sig.). The Wald coefficients are equal to the squared t-values, inferring that each t-statistic value is equal to the coefficient divided by the standard error with 1 degree of freedom (Field, 2005).

Table 5 presents the model estimates. Most of the coefficients are of the expected sign. Several predictors reached the 5% level of significance. The results show that the odd for choosing alternative park scenario A was strongly related to the parameters for 1) **type of park**, 2) **level of for crowding in the park**, 3) **percentage of the fee which goes for nature conservation** and 4) **respondents` age**, which were all significant at a 5%-level.

The variable for type of park is significant and with negative sign, reporting that respondents have stronger preferences for parks in which natural attractions are in combination with man-made facilities (e.g. hotels, restaurants, sport fields, swimming pool, shops, etc.) This might be a strong managerial implication, since currently only the traditional ski resorts outside Rila National Park offers such amenities.

As expected the parameter measuring the level of crowding in the park turn out to be highly significant and with positive sign. This variable also has the highest Wald statistics (18.106). This result implies that the probability for choosing park scenario A increases with the level of crowding decreases. This clearly shows that respondents prefer to visit parks with little traffic, with less people, where they can find quiet place to spend their leisure time in privacy.

Table 6: Model Estimates

	Variables in the Equation						95.0% C.I. for EXP(B)	
	B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Type of park	-.305	.149	4.181	1	.041	.737	.550	.987
Level of crowding in the park	.618	.145	18.106	1	.000	1.855	1.396	2.466
Access policy	.053	.143	.139	1	.709	1.055	.797	1.396
Fee level	-.084	.074	1.297	1	.255	.920	.796	1.062
Percent of fee for nature conservation	.391	.146	7.224	1	.007	1.479	1.112	1.968
Gender(1)	-.273	.147	3.447	1	.063	.761	.571	1.015
Age	-.022	.008	7.871	1	.005	.978	.963	.993
Nationality	.165	.190	.751	1	.386	1.179	.812	1.711
Education	-.129	.141	.838	1	.360	.879	.667	1.158
Income	.038	.030	1.553	1	.213	1.038	.979	1.102
Fee*fee	.003	.005	.535	1	.465	1.003	.994	1.012
Constant	.414	.495	.701	1	.403	1.513		

a. Variables entered on step 1: Type_park_a, Crowding_a, Acces_policy_a, Entry_fee_a, for_nature_conservation_a, Gender, Age, nationality, Education, income, fee_fee.

It was of great interest for me to test the interaction effect between the parameters for level of crowding and fee level. However, this interaction did not reach sufficient significance level and was not included in the final model.

The other significant parameter at a 5%-level is the one measuring the effect of percentage of entry fee which will go for nature conservation. As expected it is with positive sign, referring that majority of respondents in this study were willing to give part of entrance fee paid, provided that the money would go towards protecting and improving the site. Another interesting interaction effect which did not achieve significance and thus was not included in the final model was the one between fee level and percentage for nature conservation.

The parameters for access policy had a positive sign showing that respondents prefer fixed entrance fees over access policy where foreign tourists had to pay 50% more. This suggests that tourists have stronger preferences for equity over efficiency when have to pick an instrument for access policy to Rila National Park. This finding is not in line with the results obtained from the attitudinal part of the survey introduced through question 7.5. However, the parameter was not significant, showing that for tourists this attribute was not of a great importance when making decision for outdoor recreation options.

The coefficient for price is negative as expected, reflecting preferences for lower prices. It is interesting that this parameter didn't reach the 5%-level of significance. An additional variable that is the quadratic of fee was created in order to capture non-linear effects (e.g. if people really dislike the highest fee level). Nevertheless, this parameter was also not significant, implying that for the participants in the survey, the entrance fee is not so important and thus modest fees would not have a large impact on the demand for visitation of the park. This result could be explained by the fact that such fee is only a small part of the total trip cost. Another reason may be that some of the attractions/sceneries in the park are both unique and popular and so have low price elasticity.

The parameter for age is highly significant and with negative sign. This implies that younger respondents (with higher income) were more likely to choose park scenario A. The main effects of education, income, gender and nationality were all not significant but with the expected signs. This was a surprising finding since it is believed that the socio-demographic characteristics of respondents influence their preferences for outdoor recreation. This could be explained by the fact that people are much more complex than their observable demographic characteristics.

Finally, the parameter for education had negative sign, suggesting that tourists with lower level of education were more likely to pick park scenario A.

According to scholars, a logistic model is said to give a better fit to the data if it shows an improvement over the intercept-only model, also called the null model, which has no predictors. Such an improvement can be examined through inferential and descriptive statistics. The likelihood ratio and Wald tests all belong to the group of inferential statistics (Peng & So, 2002; Filed, 2005).

The log-likelihood is based on summing the probabilities associated with the predicted and actual outcomes. It is an indicator of how much unexplained information there is after the model has been fitted. Larger values of the log-likelihood statistics denote poorly fitting statistical model. This is due to the fact that the larger the value of the log-likelihood, the more unexplained observations there are (Filed, 2005). The value of log-likelihood statistics of the logistic model in this thesis is equal to 1121.795, which indicate poorly fitting statistical model (See Table 6). However the chi-square statistics for the model is equal to 53.211, implying that the model as it currently stands predicts the outcome much better than when only the constant was included.

Another method for assessing the model is the R and R². The R-statistics in logistic regression is the partial correlation between the outcome variable and each of the predictor variables. It can vary between -1 and 1. A positive value indicates that as the predictor variable increases so does the likelihood that the event will occur. Moreover, a negative value demonstrates that as the predictor variable increases the likelihood of the outcome occurring decreases. So if a given variable has a small value of R then it contributes only a small amount to the model (Field, 2005).

Table 7: Model Summary

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1121.795 ^a	.059	.080

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

There exists several descriptive measure of goodness-of-fit that can be used for assessment of such kind of statistical model. All of them are variations of the R² – value in linear regression. A great number of formulas have been applied in order to produce an equivalent of this concept for

the logistic model. However, still there is controversy over what would make a good analogue to the R^2 used in linear regression (Field, 2005).

Among the different R^2 analogs suggested for logistic regression, the McFadden's R^2 is preferred over others. According to scholars the McFadden R^2 is conceptually alike the R^2 in linear regression. It is known to be relatively independent from base rate and comparable across models that comprise different predictors, yet the same outcome variable (Peng & So, 2002). However SPSS uses Cox & Snell's R^2 , based on the log-likelihood of the model, the log-likelihood of the original model and the sample size. This statistics never reaches its theoretical maximum of 1 and thus SPSS also uses another, improved model – the Nagelkerke's R^2 . The values for Cox & Snell's R^2 and Nagelkerke's R^2 are low, 0.059 and 0.080 respectively, that implies very low substantive significance of the model used in this thesis (See Table 7).

Moreover, the parameters in the model were tested for collinearity since this is an essential step in carrying a logistic regression analysis. Unfortunately, SPSS does not have an option for producing collinearity diagnostics in logistic regression. It has been suggested by Field (2005) to run a linear regression analysis using the same outcomes as predictors in order to obtain statistics such as tolerance and variance inflation factor (VIF).

All independent variables in the model are tested. For each variable in Table 7 are shown its tolerance and VIF coefficients. The tolerance coefficient is equal to $1 - R^2$, where R^2 is the coefficient of determination of each independent variable on all other independent variables in the regression. The tolerance coefficient represents the percentage of the variance in every independent variable that cannot be determined by the other independent variables. Therefore, the lower it is, the higher the multivariate correlation. Field (2005) argues that a tolerance values less than 0.1 almost certainly indicates a serious collinearity problems. Also it has been suggested that a VIF value greater than 10 is cause for concern about multicollinearity in the regression. We can see that all parameters have acceptable tolerance and VIF values, thus there should be no concern for multicollinearity in the model (see Appendix B, Table 8).

CHAPTER 5 CONCLUSION AND LIMITATIONS

The purpose of this study is to analyze individuals' preferences for the attributes defining potential park developments in Rila National Park in Bulgaria in the context of equity and efficiency. A CE was conducted in which tourists were asked to state their choices from two hypothetical park scenarios on the basis of their attributes and the option to visit the current Rila National Park. Thus the CE explored the preferences of tourists for the type of park, the level of crowding in the park and the access policy. Two visitors revenue options were include in the survey: entrance fee and the percentage of that fee that will go for nature conservation and improvement of the site.

By giving respondent the opportunity to evaluate and trade-off several attributes simultaneously, the CE survey gives more comprehensive assessment of visitor preferences than traditional opinion surveys. The logit model was applied to the collected data and the tourists preferences for each attribute were estimated. The CE results were also used to test individual preferences for equity or efficiency with respect to NBT. Overall, the results obtained from the binary logistic regression did not support the idea that there is any relation between the type of access policy to the park and tourists' preferences for equity or efficiency as it was suggested. Event though the parameter for access policy was not significant; it was with positive sign, implying that the probability that a given park will be chosen increases when the fee is switched from differentiated to fixed. The attitudinal questions showed support for this finding. Little more than half of the respondents believe that public land recreation should remain free. This finding shows that tourists favor equitable distribution for this type of resource. Further more, almost 60 % of the participants agree to some extent that fee for outdoor recreation promotes efficiency by providing a market-like mechanism to allocate recreational resources. On one hand more that 50% of the respondents approve fixed entrance fee and perceive them as equitable instrument for rationing access to Rila National Park. On the other, only 12.7% of the entire sample totally supports the introduction of differentiated entrance fee where foreign visitors should pay twice than Bulgarians.

Further on, no relation was found between the proposed entrance fee and the probability for choosing each of the recreational options. However, the probability for visiting the park increased with the increase in the percentage of the fee that will go for nature conservation. This result is consistent with previous research that showed that tourists are willing to pay reasonable amount of money when they know that those money will be spent for improving the site qualities (Schroeder & Louvier, 1999, Kelly et al, 2007). Further on, it was found that the parameters for type of park, level of crowding and respondents' age were all strongly related to the probability of choosing specific type of outdoor recreation.

This model also illustrates what kind of information CE can provide to recreational site managers who are considering the implementation different types of fees at national parks. Such information may help managers to anticipate the impact of fee and different type of access policies on the choices of the tourists visiting those sites. It could help them to decide what kind of changes and adjustments in other site attributes can offset the impact on particular segments of the visitors (Schroeder & Louvier, 1999).

There are some methodological issues related to this thesis that could be addressed in future research. It is important to have in mind that the choice options presented, represent hypothetical scenarios and thus in reality the respondents may behave differently. Further on, the attributes describing each alternative do not cover many of the complexities associated with actual decisions. CE may be used to predict impact of management decisions for real recreation sites as in the case of Rila National Park only if the model definition includes all of the attributes relevant to people's choices. The predictions of such model may be inaccurate if some of the sites of the choice set have unique features and qualities (Schroeder & Louvier, 1999). We also must remember that this type of hypothetical analysis provides information about respondents' behavior that could not be quantified in any other way (More & Stevens, 2000). Similar studies in other national parks could serve to confirm/reject, compare and modify the findings obtained in this thesis.

In this thesis, the Binomial Logit Model was used to estimate choice probability under the assumption of Independence of Irrelevant Alternatives (IIA). In Chapter 2 was discussed that the IIA property implies that the probability of choosing one alternative over another must be constant regardless of whatever other alternatives are present (Haaijer,1999). However, in this case such assumption may be violated. In their works Louviere & Woodworth (1983) and Batsell

& Louviere (1991) discuss how one can design choice experiments to test violations of Independent and Identically Distributed (IID) error terms. Other studies like the one of McFadden (1987) provide actual test methods. If IID violations are found, the researcher can utilize more flexible specifications such as Multinomial Probit discrete choice models which do not require IIA property (Adamowicz et al., 1998a). In future studies, this potential problem should be taken into deeper consideration.

As mentioned earlier, the interviews were conducted during the months of July and August. Thus the sample of this survey may have some seasonal and regional bias. There could be an over-representation of some nationalities (e.g. Germans, Dutch, and Britons) which traditionally visit Bulgaria in the summer months to spend their holidays on the Black Sea. Thus the implications of this thesis may not be applicable to other periods over the year and to other geographic regions. Also, the sample size was not large, even though each respondent made eight choices. This is potential reason for the fact that most of the results were not statistically significant. In future studies a larger sample collected through the whole year may be used. For further discussion about the sample size, please refer to Ben-Akiva & Lerman (1985), Daganzo (1980), and Cosslett (1981) as suggested in (Adamowicz et al., 1998a).

Despite all the mentioned limitations, with this I believe I have contributed to the literature exploring tourists preferences for outdoor recreation in the context of equity and efficiency. The limitations of the study give suggestions how further research can deal with the problems encountered in this master thesis. It gives the theoretical ground for a topic on which little previous research has been done and it shows which data-related limitations could distort the results and how they could be overcome.

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APPENDIX A

FIGURES

Figure 1: Distribution of Age

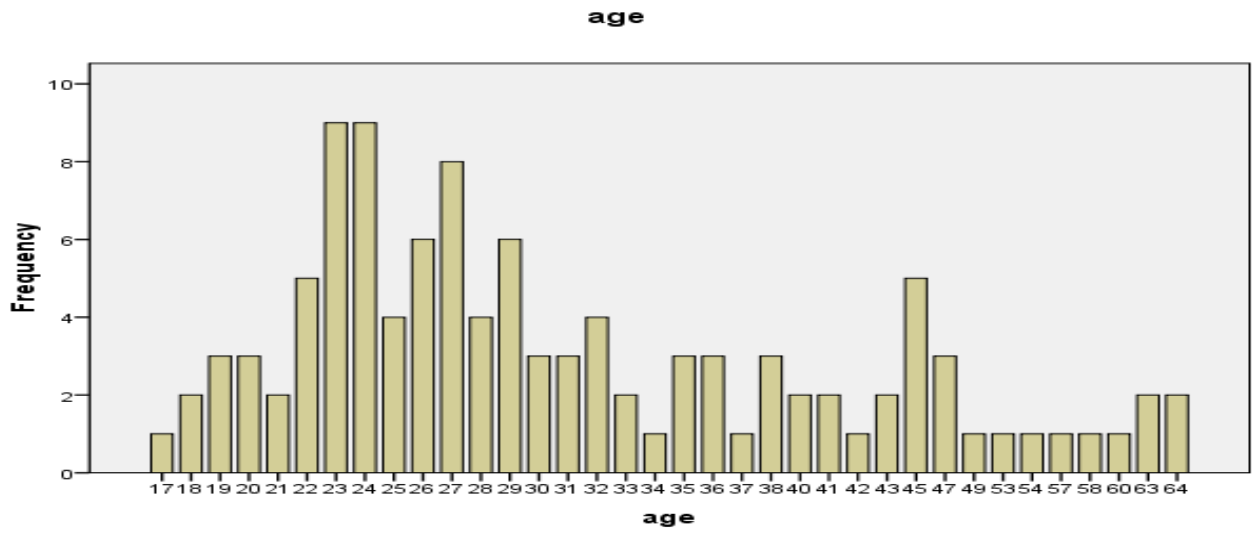


Figure 2: Country of residence

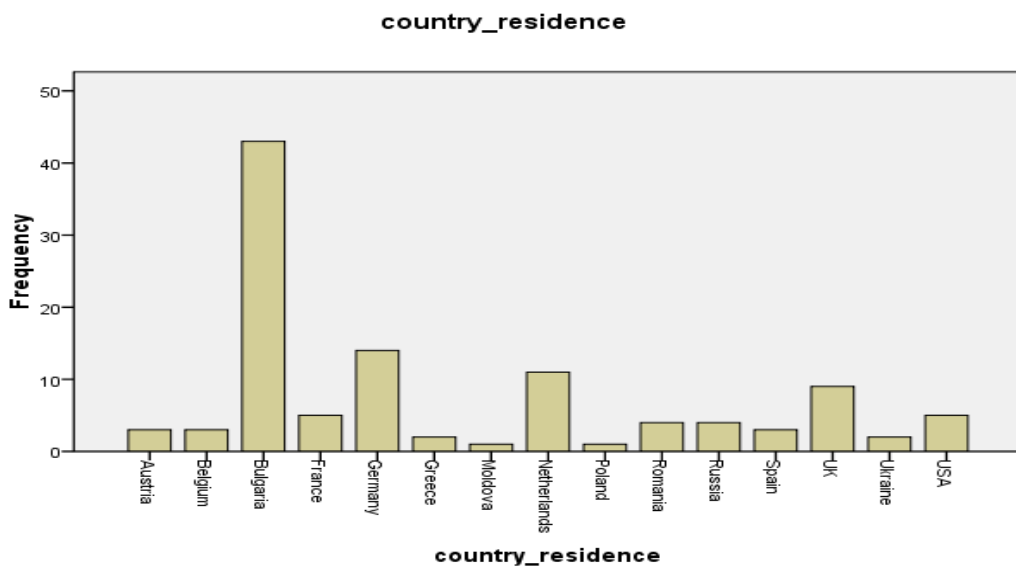


Figure 3: Number of nature-based/ecotourism related trips

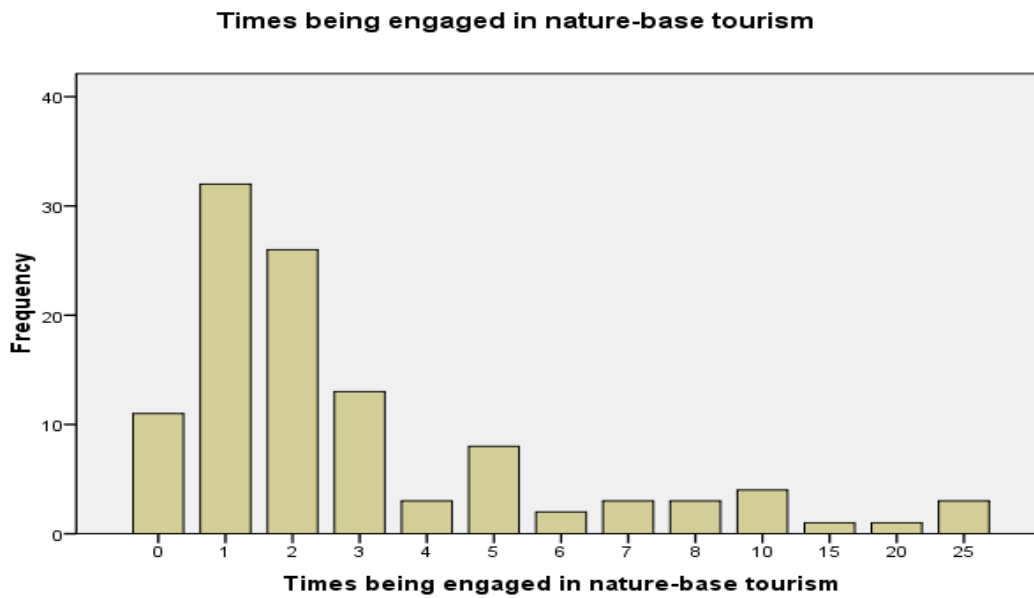


Figure 4: Is it important that the mountain is preserved in its natural conditions?

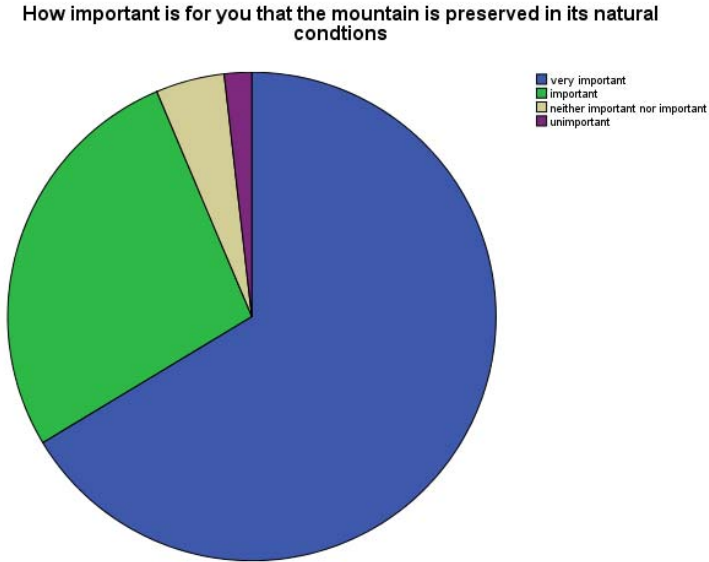


Figure 5: Public land recreation is the birthright of every person and should remain free

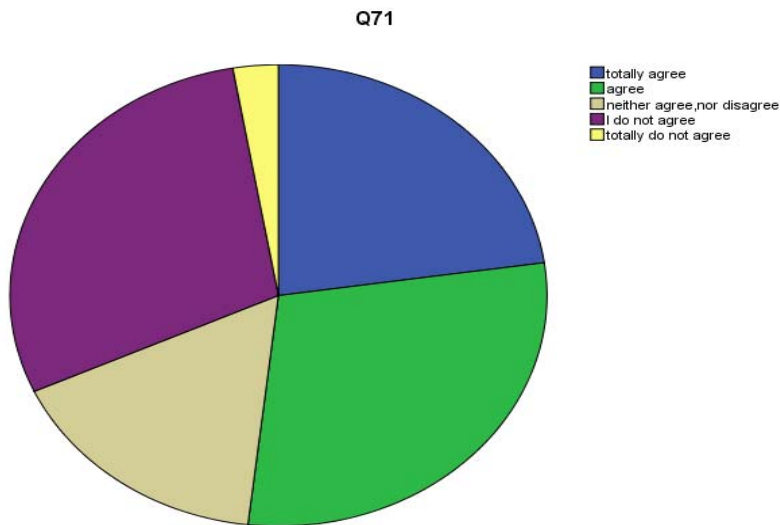


Figure 6: Fees for outdoor recreation promotes efficiency by providing a market-like mechanisms to allocate resources

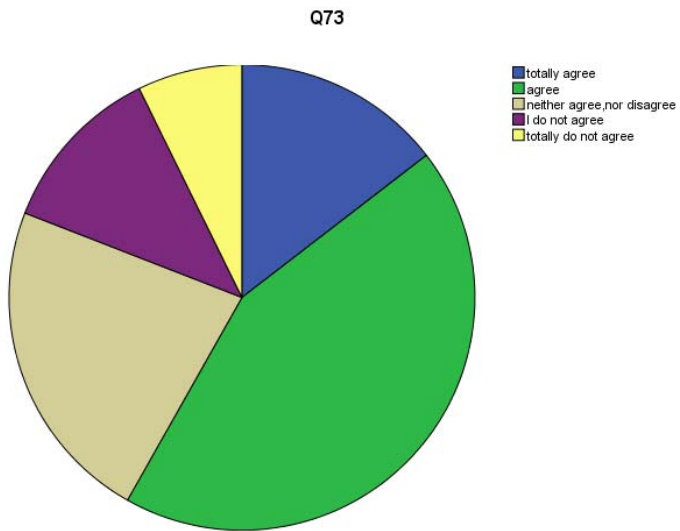


Figure 7: A fixed entrance fee (everybody pays the same) promotes equity

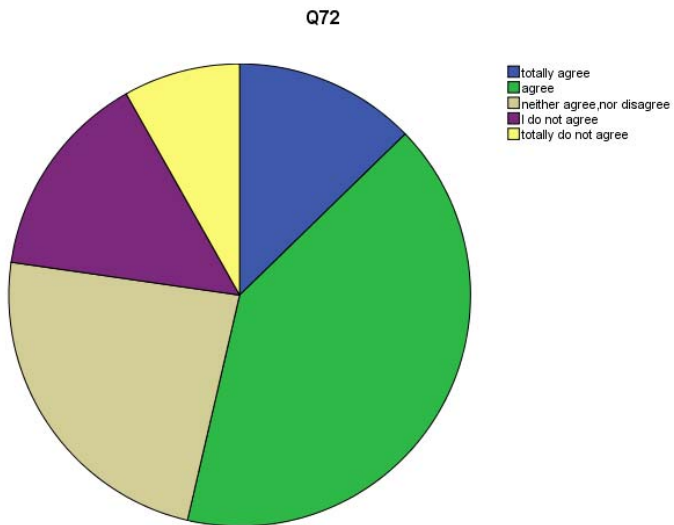


Figure 8: A differentiated entrance fee (lower for nationals, higher for foreigners) promotes efficiency

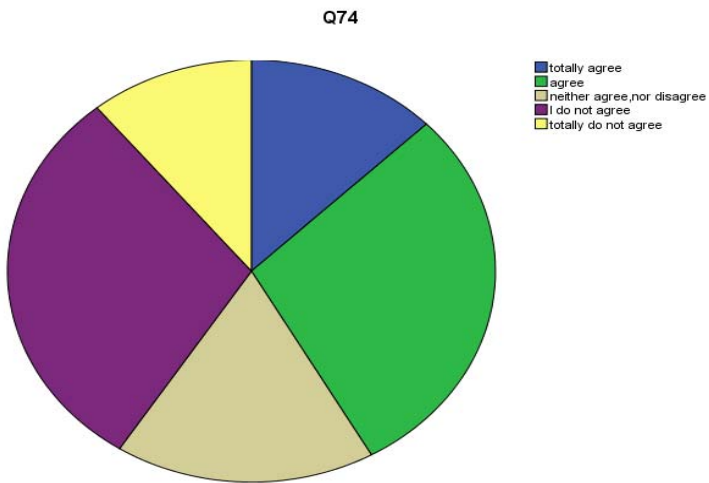
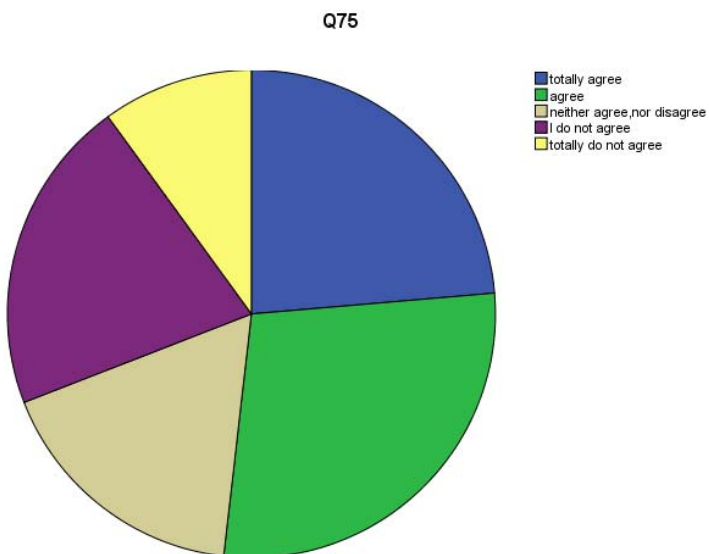


Figure 9: Q7.5 'Foreign visitors should pay more since they do not pay local taxes and thus do not support the park maintenance'



APPENDIX B

TABLES

Table 1: Categories of fees and charges in NBT

Fee Type	Observation
General entrance fee	‘Gate fees’ allow either free or priced access to facilities beyond the entry point
Fees for use	Examples: fees for visitor centers, parking, camp site, guide services, boat use, trail shelters, emergency rescue, etc.
Concession fees	Charges (or revenue shares) are assessed on individuals and businesses which sell food, accommodations, transportation, guide services, souvenirs and others goods and services to NBT visitors
Royalties and profit shares	Can be charged on sales of guidebooks, postcards, tee-shirts, souvenirs, books, films, photos, etc.
Licenses and permits	For tour operators, guides, researchers, wildlife collectors, mountain climbers, river rafters, etc. The concept can be extended to individual campers, bikers, etc.
Taxes	Examples: room taxes, airport taxes, vehicle taxes, excise taxes on sports and outdoor equipment, etc.
Voluntary donations	Include cash and in-kind gifts, often through ‘friends of the park’ organizations

Source: Laarman and Gregersen (1996), p.250.

Table 8: Collinearity Statistics

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Type of park	.966	1.035
Level of crowding in the park	.977	1.023
Access Policy	.997	1.003
Fee level	.991	1.009
Percent of fee for nature conservation	.982	1.018
Gender	.967	1.034
Age	.712	1.405
nationality	.577	1.732
Education	.710	1.409
income	.601	1.665

a. Dependent Variable: choice_a

APPENDIX C CHOICE EXPERIMENT

The natural heritage of **Bulgaria** has been referred to as its **“GREEN GOLD”**. The country is characterized by **rich biodiversity**, an invaluable cultural and historical heritage, long-standing traditional practices and beautiful landscapes, along with a favourable climate, diverse water resources, and a strategic location at the crossroads of Europe and Asia.

All of this creates excellent conditions for development and promotion of **nature-based /eco tourism** as an alternative or a complement to mass beach and ski tourism.

Many nations promote nature-based tourism in order to promote the dual goals of nature conservation and income generation. **Ecotourism** is part of the growing international market niche of the tourism sector.

In order to make **Bulgaria** more attractive eco tourism destination, the **Government** considers turning part of Rila National Park into a **new theme based park (adventure or luxury park resort)** in which eco-tourism and other activities will be promoted. **This new zone will offer excellent conditions for outdoor recreation for both nationals and foreign tourists.**

To be more efficient and financially sustainable, the new park will introduce entrance fees. Such practice is common in many national parks in the world. The management of the park gets the right to generate income from the product of the mountain; that is to say, to sell it to us in the form of entrance fees. In return the agency bears the obligation to provide lodging facilities, maintain and improve the quality of the environment, e.g. repair paths, remove litter, improve signage etc.

Besides, certain percentage of the entrance fee will go into a special fund devoted to nature conservation programs. It is presumed that the agency will observe the rules!



Please, read short description of Rila National Park before filling in the questionnaire!

Rila National Park is one of Europe's largest national parks and is in the Balkan Peninsula's highest mountain range. Virtually sheltered from human impact, Rila has some of the most secluded forest ecosystems. About 95% of these are natural forests averaging 90 years in age. Some of the largest rivers in the Balkan Peninsula originate here. Spectacular mountains, huge old forests, and crystal clear lakes make up Rila National Park and provide a wilderness experience for everyone fortunate enough to visit. Along with its diverse natural heritage, Rila National Park is also rich in cultural and historical landmarks, affording excellent opportunities for showcasing local culture and traditions. The hot mineral springs around the Park are an additional tourist draw and provide opportunities for spa resorts and treatment.

However, the visitor's service and park facilities are **unsatisfactory**. The conditions in chalets are average to poor, with little or no investment in infrastructure or improvement of the room and board facilities. **The utilities and facilities as well as the associated mechanical elements are often in disrepair and/or inefficient in their operations. The sanitary facilities and conditions are poor or nonexistent.**



Please, read short description of the two possible themes before filling in the questionnaire!

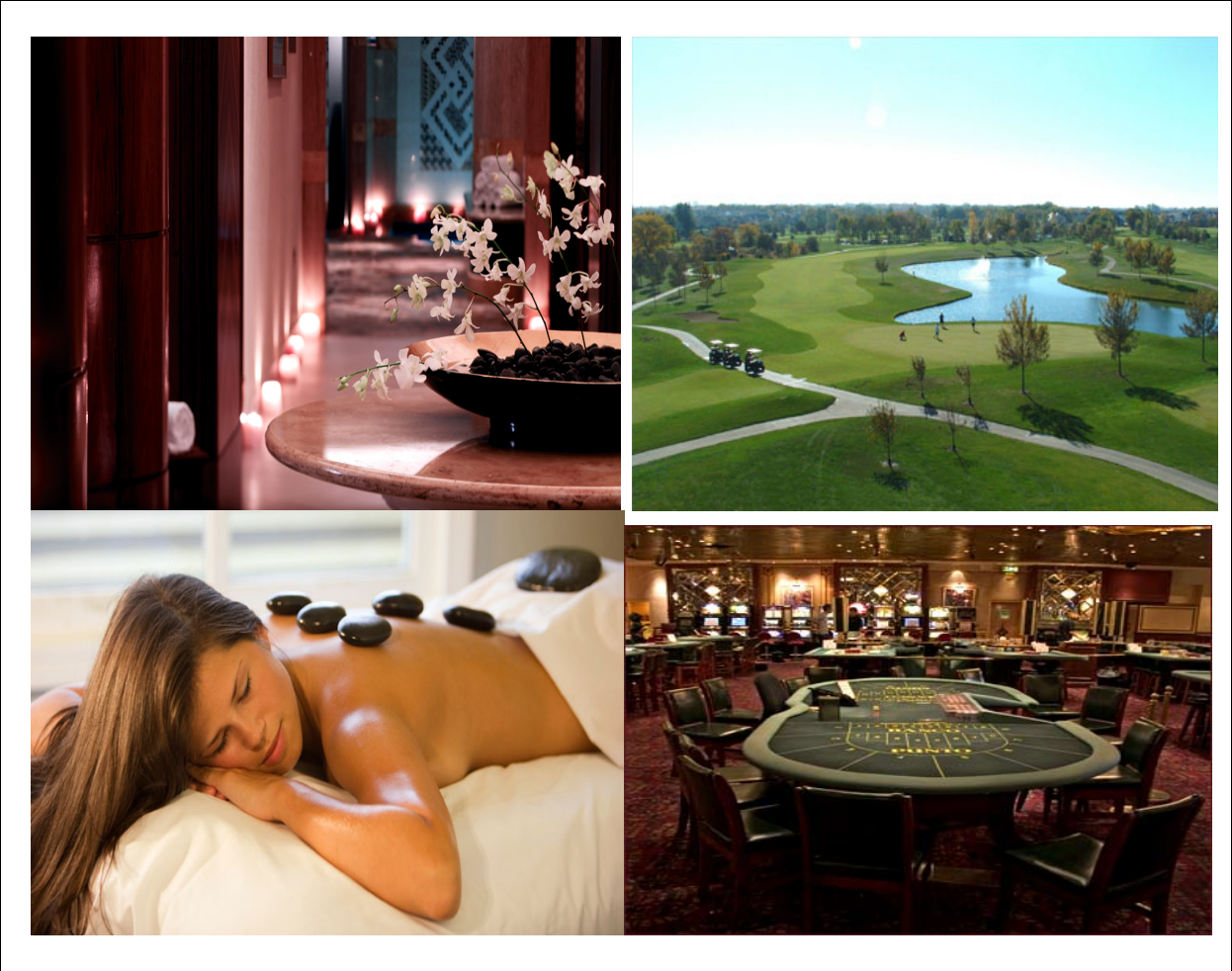
PARK PROJECT A

Facilities:	Activities:	Accommodation
<ul style="list-style-type: none"> • Hiking trails • Eco-tracks • Boat and canoe rental • Bike rental • Information centre • General Store • Bike/ATV/ trails • Skate/Snow Park • Parking • Picnic area and tables • Picnic shelters with BBQ 	<ul style="list-style-type: none"> • Hiking • Rock climbing • Cave exploration • Horseback riding • Fishing • Rafting • Swimming • Ski tracks • Skate/Snow park • Animal observation • Park education for children 	<ul style="list-style-type: none"> • Campground with showers and toilets • Chalets • Lodges



PARK PROJECT B

Facilities:	Activities:	Accommodation
<ul style="list-style-type: none"> • Service Centre • Restaurants • Casino • Bars/Discotheques • Pubs • Traditional cuisine • Animal museum • Souvenirs shop • Local craftsmen • Athletic fields and Facilities • Medical Clinic 	<ul style="list-style-type: none"> • Golf track • Ski tracks • Tennis • Eco-safari • SPA procedures • Wellness centre • Yoga • Snowmobile touring 	<ul style="list-style-type: none"> • Hotels • Private cabins • Lodges





INSTRUCTIONS

THINK ABOUT A FREE DAY WHEN YOU WANT TO DO AN OUTDOOR ACTIVITY in Rila National Park. On each page you will be offered a CHOICE OF TWO POSSIBLE PARK PROJECTS in mountain Rila.

Next, CONSIDER WHETHER YOU PREFER SOME OF THE PROPOSED PARK PROJECTS OR YOU PREFER TO VISIT RILA NATIONAL PARK IN ITS CURRENT STATE.

After reading the description of the two parks (Park Project A and Park Project B), *you simply choose the one that will be best for you.* Mark your choice at the bottom of each set of parks. Remember, there are no right or wrong answers, only your personal preferences.

Please MARK YOUR CHOICE ON EVERY PAGE. Each page is different situation, so look at the park description carefully before you make your choice. It is important to complete the entire SURVEY! Incomplete forms cannot be used, so please be sure that you filled in all the required information.

I hope you will enjoy the survey. Your preferences are important for the Government's decision for the future projects. Thank you for making a commitment to help (me)!



	<u>PARK PROJECT A</u>	<u>PARK PROJECT B</u>
Type of park	Nature-based	Nature and man-made facilities
Crowding	Little traffic, very few people, quiet, many places for privacy	Lots of traffic, very crowded, No privacy, quite noisy
Access policy	Fixed entrance fee	50% discount for nationals
Entrance fee (per day)	2 Euro	6 Euro
% for nature conservation	0%	50%

Which of these projects would you prefer on a day you wish to be outdoors? You simply choose the one that will be best for you. Please mark your choice. If you don't like any of them you may choose the option to go to the currently existing section of Rila National Park.

New Project A **New Project B** **Current Rila National Park**

	<u>PARK PROJECT A</u>	<u>PARK PROJECT B</u>
Type of park	Nature-based	Nature and man-made facilities
Crowding	Lots of traffic, very crowded, no privacy, quite noisy	Little traffic, very few people, quiet, many places for privacy
Access policy	Fixed entrance fee	50% discount for nationals
Entrance fee (per day)	6 Euro	10 Euro
% for nature conservation	50%	0%

New Project A **New Project B** **Current Rila National Park**



	<u>PARK PROJECT B</u>	<u>PARK PROJECT A</u>
Type of park	Nature and man-made facilities	Nature-based
Crowding	Little traffic, very few people, quiet, many places for privacy	Lots of traffic, very crowded, no privacy, quite noisy
Access policy	50% discount for nationals	Fixed entrance fee
Entrance fee (per day)	2 Euro	6 Euro
% for nature conservation	0%	50%

Which of these projects would you prefer on a day you wish to be outdoors? You simply choose the one that will be best for you. Please mark your choice. If you don't like any of them you may choose the option to go to the currently existing section of Rila National Park.

New Project A

New Project B

Current Rila National Park

	<u>PARK PROJECT B</u>	<u>PARK PROJECT A</u>
Type of park	Nature and man-made facilities	Nature-based
Crowding	Little traffic, very few people, quiet, many places for privacy	Lots of traffic, very crowded, no privacy, quite noisy
Access policy	50% discount for nationals	Fixed entrance fee
Entrance fee (per day)	6 Euro	10 Euro
% for nature conservation	0%	50%

New Project A

New Project B

Current Rila National Park



	<u>PARK PROJECT A</u>	<u>PARK PROJECT B</u>
Type of park	Nature-based	Nature and man-made facilities
Crowding	Little traffic, very few people, quiet, many places for privacy	Lots of traffic, very crowded, no privacy, quite noisy
Access policy	Fixed entrance fee	50% discount for nationals
Entrance fee (per day)	10 Euro	14 Euro
% for nature conservation	50%	0%

Which of these projects would you prefer on a day you wish to be outdoors? You simply choose the one that will be best for you. Please mark your choice. If you don't like any of them you may choose the option to go to the currently existing section of Rila National Park.

New Project A

New Project B

Current Rila National Park

	<u>PARK PROJECT B</u>	<u>PARK PROJECT A</u>
Type of park	Nature and man-made facilities	Nature-based
Crowding	Little traffic, very few people, quiet, many places for privacy	Lots of traffic, very crowded, no privacy, quite noisy
Access policy	50% discount for nationals	Fixed entrance fee
Entrance fee (per day)	10 Euro	14 Euro
% for nature conservation	50%	0%

New Project A

New Project B

Current Rila National Park



	<u>PARK PROJECT A</u>	<u>PARK PROJECT B</u>
Type of park	Nature-based	Nature and man-made facilities
Crowding	Lots of traffic, very crowded, no privacy, quite noisy	Little traffic, very few people, quiet, many places for privacy
Access policy	Fixed entrance fee	50% discount for nationals
Entrance fee (per day)	14 Euro	10 Euro
% for nature conservation	0%	50%

Which of these projects would you prefer on a day you wish to be outdoors? You simply choose the one that will be best for you. Please mark your choice. If you don't like any of them you may choose the option to go to the currently existing section of Rila National Park.

New Project A

New Project B

Current Rila National Park

	<u>PARK PROJECT B</u>	<u>PARK PROJECT A</u>
Type of park	Nature and man-made facilities	Nature-based
Crowding	Lots of traffic, very crowded, no privacy, quite noisy	Little traffic, very few people, quiet, many places for privacy
Access policy	50% discount for nationals	Fixed entrance fee
Entrance fee (per day)	14 Euro	10 Euro
% for nature conservation	0%	50%

New Project A

New Project B

Current Rila National Park

Thank you for your patience, just a few more seconds and you are done. On the next page you will find some brief general questions. Please, fill them in, since they are extremely important for the study!

SURVEY

Q1: Are you interested in nature-based tourism/ eco-tourism?

- Yes
- No

Q2: How many times you have been engaged in nature-based tourism/eco-tourism during the last year?

Response:times

Q3: What is the duration of your visit (in days on average) and what are your expenses for accommodation for the same period?

Response:days

Response: euro

Q4: Have you ever visited Rila National Park?

- Yes
- No

Q5: If yes, what is the reason for your visit? (multiple answers are possible)

- need for purity and quietness
- wild nature
- camping
- contact of people with similar views
- plant and animal observation
- sports and physical fitness

Q6. Is it important to you that the mountain is preserved in its natural conditions (choose one)?

Very important	Important	Neither important nor unimportant	Unimportant	Absolutely unimportant

Q7: To what extent do you agree with the following statement?

(Note: Efficiency has to do with how much wealth given resource base can generate. Equity has to do with how that wealth is to be distributed in society.)

Statement	I totally agree!!!	I agree!	Neither agree, nor disagree.	I do not agree!	I totally do not agree!!!
Fees can improve equity by shifting the burden of paying for an area or activity to those who actually use it.					
Public land recreation is the birthright of every person and should remain free.					
A fixed entrance fee (everybody pays the same) promotes equity.					
Fees for outdoor recreation promote efficiency by providing a market-like mechanism to allocate resources.					
A differentiated entrance fee (lower for nationals, higher for foreigners) promotes efficiency.					
Foreign visitors should pay more since they do not pay local taxes and thus do not support the park maintenance.					

Please fill in some personal data which is necessary for the analysis of the questionnaire.

Your answers will not count without it!

Sex:
• Female
• Male
•
• Age:
• Born in(year)
• Country of residence:.....
• City:.....

Educational level:

<input type="checkbox"/> Primary
<input type="checkbox"/> Secondary
<input type="checkbox"/> University or college degree
<input type="checkbox"/> Higher (ex. PHD)

What is the number of people (including you) in your household and how many of them are below 18 years of age (children)?
Response: people overall
Response: of them children

What is your net **household per month? (the sum that remains in your household after subtracting all taxes, social and health insurances)**

**The true answer of this question is indispensable for the evaluation of the data!
(choose category)**

0. Less than 200 euro per month	5. 1000 – 1200 euro per month
1. 200 – 400 euro per month	6. 1200 – 1400 euro per month
2. 400 – 600 euro per month	7. 1400 – 1600 euro per month
3. 600 – 800 euro per month	8. 1600 – 1800 euro per month
4. 800 – 1000 euro per month	9. 1800 – 2000 euro per month
10. More than 2000 euro per month	

If you have any comments add them here:
If you wish to receive a summary of the final results of the survey, write your e-mail address here:
Thank you for the participation!



SOME MORE OF THE ATTRACTIONS☺



