Czech University of Life Sciences Prague

Faculty of Economics and Management

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Resident´s Willingness to Pay for Enhancement of Residential Area: Case Study Dubeč

Bachelor Thesis

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Objectives of thesis

The aim of the thesis is to analyse and find out whether and how much the residents of Dubeč are willing to pay for enhancement of their residential area.

Methodology

The descriptive and comparative methods will be used in the thesis. The thesis will be amended by questionnaire based on Contingent Valuation Method.

Schedule for processing

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Recommended information sources

PERMAN, R., MA, Y., MCGILVRAY, J., COMMON, M.: Natural Resource and Environmental Economics, Third Edition, Pearson-Addison-Wesley, 2003, ISBN 978-0-273-65559-6

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Prague March 5. 2013

Declaration

I hereby declare that I have worked on my bachelor thesis titled "Residents´ Willingness to Pay for Enhancement of Residential Area: Case Study Dubeč" by myself and I have used only the sources mentioned at the end of the thesis.

In Prague on 10th March of 2013

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Tomáš Husták

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Residents´ Willingness to Pay for Enhancement of Residential Area: Case Study Dubeč

Ochota obyvatel platit (Willingness to Pay) za vylepšení residenční oblasti: Případová studie Dubeč

Summary

The thesis focuses on creation of contingent valuation scenario in which residents of Dubeč had the opportunity to evaluate the environmental resource. Contingent valuation scenario of a construction of a park was created as an alternative option against the proposed project of the developer which intends to build housing premises in residential area in Dubeč. Residents of Dubeč expressed their disagreement with the proposed project by signing the petition. The hypothetical construction of a park was created as a symbol of improved quality of environment and everyday life of residents. It represents the enhancement of residential area in Dubeč. The thesis contains the analysis of current issues of Dubeč and future issues connected to the proposed project of the developer. It should increase a population of Dubeč by approximately 10 %. The thesis is attached with the questionnaire which is based on Contingent valuation method. The surveyed sample of residents was willing to pay in average 504 CZK annually which would increase the annual earnings of Dubeč by 9.25 %. The CV study presents that majority of residents are rather willing to pay certain amount every year towards construction and running costs of a park to prevent deterioration of the environment and their everyday life.

Keywords: contingent valuation method, willingness to pay, residential area, residents, enhancement, deterioration, environment, scenario, Dubeč, Ekospol.

Souhrn

Práce je zaměřena na vytvoření scénáře založeném na kontingenčním oceňování, ve kterém měli obyvatelé Dubče možnost zhodnotit životní prostředí. Scénář založen na kontingenčním oceňování, který představuje výstavbu parku, byl vytvořen jako alternativní možnost proti navrženému projektu developera, který zamýšlel výstavbu bytových domů v residenční oblasti v Dubči. Obyvatelé Dubče vyjádřili svůj nesouhlas s navrženým projektem podpisem petice. Hypotetická výstavba parku byla vytvořena jako symbol zvýšené kvality životního prostředí a každodenního života obyvatel. Park reprezentuje zlepšení residenční oblasti v Dubči. Práce obsahuje popis současných problému Dubče a budoucí problémy, které jsou spojeny s navrženým projektem, který má zvýšit počet obyvatel Dubče přibližně o 10 %. Práce je doplněna dotazníkem, který je založen na metodě kontingenčního oceňování. Skupina dotázaných obyvatel Dubče by byla ochotna v průměru platit 504 Kč ročně, což by zvýšilo roční rozpočet Dubče o 9,25 %. Studie kontingenčního oceňování prezentuje, že většina obyvatel je raději ochotna platit nějaký roční poplatek na výstavbu a provoz parku, aby zabránili zhoršení životního prostředí a jejich každodenního života.

Klíčová slova: Metoda kontingenčního oceňování, ochota platit, residenční oblast, obyvatelé, zlepšení, zhoršení, životní prostředí, scénář, Dubeč, Ekospol.

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List of acronyms

CV	Contingent Valuation
CVM	Contingent Valuation Method
CZK	Czech Crown
EIA	Environmental Impact Assessment
NNV	Norway Nature Protection Association
PBD	Pohoda Bydlení Dubeč
TCM	Travel Cost Method
WTA	Willingness to Accept
WTP	Willingness to Pay

1 Introduction

1.1 Dubeč

Dubeč is district of Prague, the capital town of the Czech Republic, since 24th November 1990. It is located on the eastern edge of Prague city (see Figure 19 in Appendices). First mention of Dubeč is from 1088. Today, it is divided into 3 basic original locations – Dubeč, Dubeček and Lázeňka. It is fairly balanced combination of former villages and new development. Currently, Dubeč has 3439 residents (Rohožník, 2012). Residents live with rich cultural and social life. We may find here many civic associations which organise social events for children, youth and adult people. In recent years, Dubeč has improved its facilities and services. Local kindergarten and primary school were reconstructed and extended. In 2009, local council decided to revitalise neglected land located in eastern parts of Dubeč. Today there is a park which is opened for local residents and visitors. The park is intended to be a place to relax and walk. Dubeč is a place of harmony between the new development and nature which surrounds the village. (Official website of Dubeč, 2013).

1.2 Ekospol

Ekospol is Czech residential developer. The company was founded in 1992 as Limited Liability Company. The company was transformed to Joint-Stock Company three years later. Since its foundation, Ekospol has implemented more than 35 great residential development projects in Prague and surroundings. Until November 2009, Ekospol claims that it handed over three thousand flats and made eight thousand customers satisfied. The company is a holder of many certificates. In 1998, company acquired the Certificate of Quality Control System with European standards ISO 9001. In 2002, on the basis of attitude to the environment and minimisation of impacts on environment, it was granted the Certificate of Environmental Management - ISO 14001. In 2005, Ekospol acquired Certificate of Health Safety and Protection at work OHSAS 18001. (Official website of Ekospol, 2013).

1.3 Introduction into case

At the end of year 2007, Ekospol bought land in Dubeč from private owner. In February 2008, the developer addressed the local council and presented the plan of construction with which local councillors agreed. Another local council session took place on 29th April 2008 in the presence of local residents who disagreed with the proposed construction plans. After this meeting, local administration office sent a letter to Prague City Hall in which it supported its residents and disagreed with the proposed project. In response to this event, few local residents established civic association called Pohoda bydlení Dubeč (PBD). PBD began to publicly disagree with the proposed project.

In April 2008, Ekospol sent first Environmental Impact Assessment (EIA) to Department of Environment of Prague City Hall. The first EIA (EIA, 2008) was cancelled by the developer in September 2008 on its own request. The second EIA (EIA, 2011), which began in October 2008, was cancelled by the Department of Environment due to unprofessional elaboration and EIA had to be reworked. Final EIA (EIA, 2012) was sent in August 2011. Ekospol edited number of flats and parking spaces in its project. Due to this edit, Department of Environment decided that developer´s project won´t be judged by EIA. In January 2012, Ekospol applied for the initiation of area management (žádost o zahájení územního řízení). The application was denied in February 2012 by Department of Area Management (Odbor územního rozhodování) in Prague 15 due to insufficiency of documentation which had to be documented by 30th June 2012. In 3rd August the area management session (územní řízení) in Prague 15 denied the application and closed the session. Ekospol sent appeal to Prague City Hall. In this case has not been decided yet.

In August 2011, PBD began with signing of public petition against the proposed project. The members of PBD collected 632 signatures from local adult residents in 10 days. The petition was sent to Department of Environment of Prague City Hall together with residents´ letters of disagreement with the result of final EIA (EIA, 2012).

As a resident of Dubeč, the author started listening to other residents and was really impressed when people were signing the petition against the proposed project. It was interesting to listen to their comments and recommendations while they were expressing their dissatisfaction with the developer. The author started thinking about the case and tried to come up with a solution. Many residents see the project as a deterioration of the environment and their everyday life. It was decided to choose this topic because the author has found the interest in what people are able to do to improve the environment and their everyday life. In this thesis the main focus is on willingness of residents to pay certain amount to make Dubeč a better place to live.

2 Objectives

The main objective of the thesis is to create a CV scenario against proposed project of the developer and to find out whether and how much are residents of Dubeč willing to pay for enhancement of residential area. The other objective is to analyse current situation in Dubeč and its main issues to analyse preparedness of Dubeč for increase in population if such project of the developer would be constructed. One of the main goals was to find out whether residents consider the proposed project as deterioration of the environment and their everyday life and whether they would be willing to pay certain amount to prevent such deterioration. The thesis contains literature review focused on environmental economics, valuing the environment and Contingent valuation method. Methodology focuses on application of Contingent valuation method in creation of the questionnaire.

3 Literature review

3.1 Environmental Economics

"Contemplation of the world's disappearing supplies of minerals, forests, and other exhaustible assets has led to demands for regulation of their exploitation. The feeling that these products are now too cheap for the good of future generations, that they are being selfishly exploited at too rapid rate, and that in consequence of their excessive cheapness they are being produced and consumed wastefully has given rise to the conservation movement." (Hotelling, 1931)

Economics can be defined as: *"A social science that studies how individuals, governments, firms and nations make choices on allocating scarce resources to satisfy their unlimited wants. Economics can generally be broken down into: macroeconomics, which concentrates on the behaviour of the aggregate economy; and microeconomics, which focuses on individual consumers."* (Investopedia, 2013).

Environment can be defined as: *"All of the biotic and abiotic factors that act on an organism, population, or ecological community and influence its survival and development. Biotic factors include the organisms themselves, their food and their interactions. Abiotic factors include such items as sunlight, soil, air, water, climate, and pollution. Organisms respond to changes in their environment by evolutionary adaptations in form and behaviour."* (YourDictionary, 2013).

The emergence of environmental and natural resource economics as a distinct sub-discipline is relatively recent occurrence. But first concerns with the substance of natural resources and environmental problems have much earlier precursors. The evidence may be find, for example, in the writings of the neoclassical economists during eighteenth and nineteenth centuries when industrial revolution was taking place. Agricultural production was growing rapidly. Adam Smith (1723-1790) was

the first economist who systematise the argument for the importance of markets in allocating resources. Natural resources were seen as important elements of living and economic growth and it was viewed as limited in its availability. (Perman *et al*., 2003).

A major concern of environmental economics is the problem of pollution. First, it attracted the economists as a particular example of the general class of externalities. Important early work in the analysis of externalities and market failure was written by Marshall (1890). The first systematic analysis of pollution as an externality can be found in Pigou (1920). However, environmental economics did not become a distinct sub-discipline until 1970s. The modern sub-disciplines of environmental economics and natural resources have largely distinct roots in modern mainstream economics. It emerged mainly out of neoclassical economics, welfare economics and the study of market failure. (Perman *et al*., 2003).

Environmental economics is concerned with the impact of the economy on the environment, appropriate way of regulating economic activity and the significance of the environment. The main goal is to create a balance among environmental, economic and other social goals. The essence of the environmental problem is the economy – consumer desires and producer behaviour. Without the economy, majority of environmental problems are simply research questions of concern to biologists and chemists with no policy significance. For most goods and services in a modern economy, people rely on markets to match producer costs with consumer demand to get the "right" amount of pollution, and thus consumption. The problem with pollution is that markets do not work to get the socially desirable amount of pollution. (Kolstad, 1999).

One of the most important contributions of environmental economics to economics is the measuring the demand of nonmarket goods. It became the main field to many public debates over environmental quality. However, some methods for measuring demand are very controversial. Some of these methods involve directly

asking people how they value the environment. Because of that, these methods are under attack by some economists or sociologists. They claim that these methods are biased by individuals. Others argue that these methods are valid and have great importance. (Kolstad, 1999).

3.2 Valuing the environment

The environment in economics is viewed as a composite asset. It provides a variety of services. It is a very special asset because it provides the life-support system. It sustains our existence. As with other assets, people wish to improve it or at least prevent depreciation of the asset so it may provide life-sustaining services. The environment provides raw materials to the economy, which are transformed into products by the production process. It provides energy to realise the transformation. The raw materials and the energy return to the environment as a waste. The environment also provides its services to consumers. Food, drink, air, clothing and protection are all benefits that people receive directly or indirectly from the environment. It is also important to mention subjective experience. For example, looking at sunset, walking, swimming or just relaxing in nature bring variety of amenities that cannot be substituted. (Tietenberg and Lewis, 2009).

Environmental valuation is a very active and rapidly expanding field. It is also controversial. Many non-economists put price on environmental services totally inaccurately. While most economists accept the environmental evaluation, there is still disagreement in putting it in a satisfactory way. The principal motivation for environmental evaluation was to enable environmental impacts to be included in cost-benefit analysis. Impact can be both beneficial and non beneficial. Environmental valuation is a part of cost-benefit analysis round about 30 years. In the past few years, two further sources of demand for environmental valuation have emerged. The first takes into account environmental damage as a measurement of economic performance and the second takes environmental damage as an evidence in

fixing the compensation by those who are responsible for the damage. (Perman *et al.*, 2003).

To understand the relationship between the economic system and the environment, two different types of economic analysis can be applied. Positive economics tries to describe *what is, what was, or what will be.* By contrast, normative economics deals with what *ought to be.* Positive disagreements can usually be resolved by an insistence to the facts. However, normative disagreements involve judgments of value. Positive economics does not determine the desirability of some action. Suppose, for example, that people want to understand the relationship between the environment and the trade. Positive economics would describe what kinds of impact the trade had on the economy and the environment. However, normative economics would provide any guidance whether the trade was desirable. (Kolstad, 1999).

3.3 Types of values

To help in understanding the value of the environment, a classification scheme can be used. The goods are classified based on the nature of the injured party: damage to agriculture, damage to materials or buildings, health effect of the pollution. Or goods can be categorised based on the nature of pollution: water pollution, air pollution, noise pollution, radioactive contamination, soil contamination etc. Or goods can be classified based on how people are aware of the damages. It has to do with whether people obtain utility from the environment by using it. (e.g., swimming in the lake) or through more unusual means (e.g., thinking about lions roaming in Kenya). Economists divided the economic values of the environment into three main categories:

- Use value
- Option Value

- Non-use value

(Kolstad, 1999) (Tietenberg and Lewis, 2009).

Use value is associated with the consumption of the good. It reflects the direct use of the environmental resources. Examples include water extracted from the river for irrigation, fish harvested from the ocean, wood harvested from the forest or even the scenic beauty of the nature. There are ways how environmental goods impact humans. *The first way* is direct impact. It includes, for example, direct health effects of breathing polluted air. It may cause higher mortality, sickness etc. It also includes non-health effect such as noise, visual impacts or uncomfortable odour. For example, imagine smoke from the power plant that interrupts a vista you have come to enjoy. However, such impact may not cause measurable physical impact on you but you find the view annoying and would be willing to pay certain amount of money to get rid of it. This is just as real economic value as are the health effects. *The second way* how the environmental goods impact humans is through damage to ecosystems. For example, fisheries, forestry and agriculture are ecosystems from which humans directly receive economic benefit. Pollution degrades the performance of these ecosystems and makes the total benefit slightly undesirable. Another example is associated with the ecosystem of the national park. Urbanisation and pollution may disrupt the ecosystem and will have negative effect on tourists who visit the national park. (Kolstad, 1999) (Tietenberg and Lewis, 2009).

Option value reflects the value that people place on a future ability to use the environment. It shows how people are willing to preserve an option to use the environment in the future even if they do not use it now. Whereas *use value* reflects the current use of the environmental resource, *option value* shows the desire to preserve a potential for possible future use of the environmental resource. For example, imagine the visit of Šumava National Park. Perhaps a men or a woman does not plan to visit the national park in next few years but maybe he or she would like to preserve the option to go there someday. (Kolstad, 1999).

Non-use value reflects the willingness of people to preserve or improve environmental resources that they will never use. It is a controversial aspect of value. It values a person´s utility of the environmental resources, however, such person will never use it. A person may value the ecosystem in other parts of the world for a reason that other people may intend to visit it and potentially obtain something useful from the ecosystem. For example, imagine that a person may value the area of Šumava National Park not because he or she plans to make a use of it but because others may do and that makes him or her feel good. It gives him or her utility. There are three basic types of non-use values:

- Existence value
- Altruistic value
- Bequest value

Existence value is the value that a person attaches to *knowing* something exists (e.g. the lions in Kenya example mentioned earlier). It may be an addition to any value which is associated with actual or potential use.

Altruistic value comes not from person´s consumption but from the fact that this person has benefit when someone else gains benefit. For example, if a person´s neighbour has benefit from cleaning of foot-path in front of a person´s house in winter, that person obtains the utility from the fact that his or her neighbour is better-off.

Bequest value is similar. It is associated with the well-being of a person´s descendents. For example, if a person values Šumava National Park on to the next generation, that national park has a bequest value to him or her, even if he or she never uses it or does not intend to use it.

(Kolstad, 1999) (Tietenberg and Lewis, 2009).

3.4 Classifying valuation methods

There are several methods available to estimate these values. The possibilities are presented in Figure 1. Revealed preference methods are based on actual choices that are observed. From these observed choices people can directly infer actual resource values. For example, if someone would like to calculate how much a fisherman lost from the oil spill, he or she has to calculate how much the catch declined and how much was the resulting value of catch. In comparison to direct stated preference method that might be used when the value cannot be observed directly. In this method researchers have to ask respondents what value they would place on the environmental change. More complicated versions ask whether people would pay $X to prevent the change of the environment. (Tietenberg and Lewis, 2009).

Methods	Revealed Preference	Stated Preference
Direct	Market Price	Contingent Valuation
	Simulated Markets	
Indirect	Travel Cost	Attribute-Based Models
	Hedonic Property Values	Conjoint Analysis
	Hedonic Wage Values	Choice Experiments
	Avoidance Expenditures	Contingent Ranking

Figure 1: Economic Methods for Measuring Environmental and Resource Values (Tietenberg and Lewis, 2009)

The most widely used techniques are Travel Cost method (TCM) and Contingent Valuation method (CVM). TCM is a typical example of indirect approach and CVM is an example of direct approach. Because CVM is described in details in next chapter, the main ideas of TCM will be briefly summarised. TCM computes the value of a recreational resource (national park, wildlife preserve, fishery etc.) by using information how much time the visitors spend in getting to the site. Then a researcher can construct a demand curve for willingness to pay for a

"visitor day". TCM was, for example, used to value beach which were closed during oil spill. (Perman *et al*., 2003) (Tietenberg and Lewis, 2009).

3.5 Contingent Valuation Method

3.5.1 Definition of CVM

The contingent valuation method (CVM) is a direct method of environmental evaluation. It involves asking a sample of population about their willingness to pay (WTP) or willingness to accept (WTA). It is sometimes referred to as a stated preference method. It is called "contingent valuation" because the valuation is contingent on the hypothetical scenario which is put to respondents. The main use is to provide inputs to analyses of changes in the level of provision of public goods or bads, especially of environmental commodities which are non-excludable or indivisible. As compared with indirect methods, many economists see CVM as suffering from the problem that it asks hypothetical questions, whereas indirect methods exploit data on observed behaviour. On the other hand, the CVM has two advantages over indirect methods. First, it can deal with use and non-use values, whereas the indirect methods cover only the former and involve weak assumptions. Second, CVM answers to WTP or WTA question go directly to theoretical monetary measures of utility changes. While CVM can be used for use and non-use values, the use is mainly for non-use values. Most CVM applications concerned existence, or passive-use, values. The fact is that indirect methods cannot address the existence values. (Perman *et al.*, 2003).

3.5.2 Willingness to pay

"WTP is the maximum amount that an individual states they are willing to pay for a good or service." (DFID, 1997)

"The term willingness to pay can be confusing in a non-economic paradigm. Users may not be 'happy' paying certain tariff, but they are willing to pay this amount rather than go without, just as householders in the UK might not be happy paying their gas bills but know that they must pay them, or go without." (Webster, 1999).

The issue that is most important for project designers and planners is how to ensure the financial sustainability of a project. This can involve predicting what users will be able and willing to pay for a good or service. These are three ways to estimate WTP:

- Observe the prices that people pay for goods in various markets (i.e. paying local taxes, buying from neighbours, water vending).
- Observe individual expenditures of money, labour, time, etc. to obtain goods – or to avoid their loss. The method may involve observations, focus group discussions and even household surveys.
- Ask people directly what they are willing to pay for goods and services in future.

The first two approaches are called Revealed preference techniques and are based on observations of behaviour. The third approach is called Stated preference technique and includes the contingent valuation methodology. (Wedgwood and Sansom, 2003)

3.5.3 CVM Survey preparation

3.5.3.1 Step 1 – Select interview technique

The main question of the first step is to decide which interview technique is the most suitable for specific CVM research. The answer will depend on the sample size, the importance of valuation issue, the complexity of the question being asked, and the size of the budget. Generally, these types of interview techniques can be conducted:

- Mail survey
- Postal survey
- Telephone survey
- In-person survey

Mail survey is used to cover large samples of population. This survey technique aims to obtain high response rates. The disadvantages of mail survey are that it is harder to explain background information of the research. It should be fairly short survey. The longer the survey is the lower is the response rate. It may be quite expensive option.

Postal survey is very similar to mail survey. It has almost the same advantages and disadvantages as mail survey. The main advantage of this technique is that it is most used in developing countries. People who may not have access to the internet or the telephone would prefer the postal survey.

Telephone survey is widely used technique to do any research. CVM researches are complicated via telephone because of the large amount of background information required. Telephone surveys may be less expensive than mail surveys. Still it is quite expensive technique. Surveys should be short to meet high response rate.

In-person survey is generally the most effective for complex questions. It is often easier to explain background information in person. People are more likely to

complete longer surveys when they are personally interviewed. It is generally the most expensive technique.

(Wedgwood and Sansom, 2003) (Ecosystem valuation, 2013).

3.5.3.2 Step 2 – Sampling strategy and background research

Once a CVM survey is to be conducted, the first task should be to visit the particular place to work out a sampling strategy and gather information to develop hypothetical CV scenario. CV scenario should include viable options that are likely to meet the needs of the population. However the created scenario is hypothetical, it is essential that CV researchers develop realistic and practical scenario. It involves the visit of particular place to collect data and knowledge of current situation. (Wedgwood and Sansom, 2003).

The CVM involves the use of household surveys. It will always mean that a sample of the total population in the particular place will need to be surveyed. Therefore, a proportion of the population must be selected. Ideally, the CVM researchers seek to question a representative sample of the particular place. The researchers can then say that the sample represents the population and answers can be applied to a population of the place as a whole. The fundamental consideration is that any sample should be a random sample: every member of the population should have an equal chance of being selected. It is generally assumed that a representative sample is more likely to be the outcome when this method of selection is employed. (Wedgwood and Sansom, 2003).

3.5.3.3 Step 3 – Developing the Contingent Valuation scenario

The contingent valuation scenario should comprise these four key steps:

- **Define the options** that are being offered to the respondent.

- **Decide how the options will be offered** to the respondent. Will all respondents be asked their willingness to pay for all options?
- **Choose realistic payment method** which clearly sets out how the respondent is being asked for his or her willingness to pay for improved services.
- **Choose elicitation method.** It depends on how the willingness-to-pay is being asked and how many options were offered to the respondents.

(Wedgwood and Sansom, 2003).

3.5.3.4 Step 4 – Decide which elicitation method to use

To ensure that this CV process is more accurate, a range of techniques were developed to ensure that the respondent´s answer is rational and realistic and more likely reflect what they would pay. There are five elicitation methods:

- The direct open-ended question method
- The bidding game
- Take it or leave it (referendum voting)
- Payment cards
- Contingent ranking

The direct open-ended question method asks respondent directly for his or her WTP. The advantage of the method is that lack of cues is given to the respondent about the expected value of environmental resource. However, for same reason this method encounters difficulties. People might not think about valuing an environmental resource. The respondent might need some framework for his or her decision. The questions are quite easy to set up but can be very difficult to answer.

The bidding game method is one of the most used common techniques. It requires the respondent to go through a series of bids until he or she gives a negative response. The questioner suggests the first bid which is called the starting point.

Respondent agrees or disagrees whether he or she would be willing to pay that price. The starting point price is then increased to see whether the respondent is willing to pay higher price. The last accepted bid is taken as the maximum willingness to pay. This method provides the opportunity to respondent to develop an opinion about payment for an environmental resource.

The take it or leave it method, also called referendum method, requires the respondent´s approval or disapproval for a single monetary sum. The respondent has two choices, either "yes, I would be willing to pay" or "no, I would not be willing to pay". This technique gives only one answer. But it is possible to calculate the expected average using statistical techniques. This technique is recommended for CV surveys where an experienced statistician is participated to analyse the result.

Payment card method requires a list of possible prices and asks respondent to indicate his or her choice and willingness to pay. This method has a greater risk of bias and the range of possible answers must be carefully determined.

The contingent ranking method presents a list of multi-attribute alternative options to respondent. Each option has a WTP value or cost assigned to it. The respondent is then asked to rank the options according to his or her preferences. The analysis of results of contingent ranking can be more complicated. At a simple level the results can show that respondents prefer Option A as a first choice etc. Contingent ranking usually takes place in focus group discussions.

(Wedgwood and Sansom, 2003).

3.5.3.5 Step 5 – Complete household survey and CVM questions

When CV scenario has been designed, completing the household survey and the contingent valuation section should be relatively simple. The CV questions should be designed to produce answers that are simple to understand. Undertaking a large household survey involves questionnaire and sample design, pre-testing, training of enumerators, survey implementation, data entry and processing.

The structure of the questionnaire can be divided into three sections:

- Section 1 – Introduction to survey, demographic and socio-economic data
- Section 2 – Current issues and scenarios, existing environmental resource
- Section 3 – Contingent valuation scenario and willingness to pay section

(Wedgwood and Sansom, 2003).

3.5.4 Advantages of Contingent Valuation Method

Contingent valuation method is very flexible. It can be used to estimate economic value of virtually anything. However, the best use is to estimate values for goods and services that are easily understood and identified by users and which are consumed in discrete units. CVM can estimate values of such goods and services that are not easily observable. CVM is the most widely used method for estimating total economic value including all types of environmental values such as use values, non-use values, option values and bequest values etc. The nature of CV studies and the results of CV researches are not difficult to analyse. Values can be presented in terms of a mean or median value per capita or per household, or as an aggregate value for the affected population. A great deal of research is being conducted to improve the methodology. The goal of CV researchers is to make results more reliable and valid and they try to better understand its strengths and limitations. (Ecosystem valuation, 2013).

3.5.5 Problems with Contingent Valuation Method

Contingent valuation method is very controversial. There is a possible conflict of interest within the economics community. A primary criticism is that the values from CV surveys are not based on a real resource. The created scenario is hypothetical. Many economists argue that without a real resource at stake the response to willingness-to-pay question is meaningless. Another way of looking at it

is that there is no budget constraint in a hypothetical survey. Without a budget constraint the choices are meaningless. The supporters of CVM replies on this issue that response to a hypothetical question is much more scatter when there is no real resource at stake.

Another problem was raised with concerns about ambiguity in what people are valuing. When a respondent is asked how much would he or she would be willing to pay to avoid the extinction of panda bear in China, does that amount he or she is offering truly reflect his or her concern for panda bears or is he or she simply purchasing a moral satisfaction by responding that he or she would be willing to pay to provide an environmental good. For example in 1992, a CV study was conducted in Norway. They were asking respondents if they would be willing to contribute 200 Norwegian Kroner to Norwegian environmental organisation (NNV) to protect Norwegian environmental resources. To that question, 63 % respondents answered yes. These people were then targeted by NNV asking for a contribution with no reference to previous CV study. Less than 10 % of people contributed. The suggestion was that the CV results were unreliable.

Another problem with CV studies is called embedding. A typical problem for a CV survey is to determine the value of natural resource. For example, a CV survey values a particular park. However, there are usually substitute parks outside. It appears to be unreliable in how people value individual parks versus group of parks. People may place the same value on cleaning up one park as on cleaning up 10 parks.

A related issue concern existence value. People may value Šumava National Park even if they have no intention of visiting it. There are some questions whether existence value is valid since it is not connected to a real payment.

The greatest criticism of contingent valuation is the hypothetical nature of the exercise. People determine their willingness to pay when no money is at stake.

(Kolstad, 1999).

4 Methodology

4.1 Description of contingent valuation scenario

It was decided to use Contingent Valuation Method to measure the willingness of residents to pay for use value. Use value in this case is a hypothetical alternative scenario against proposed project of the developer. Residents might be willing to pay for environmental resource – in this case a park. The park is a use value because residents may actively or passively use the park directly. Actively by visiting the park and relax or walk there and passively by obtaining satisfaction that such resource exists near their house.

A questionnaire was created for the purpose of this research. The questionnaire focuses on current situation in Dubeč. Main focus is on current issue of planned project of the developer, comparison of current situation and future situation if such housing premises would be built in future and on proposed hypothetical alternative of construction of a park. Due to displeased atmosphere among the majority of residents, who unanimously rejected the project by signing the petition, a hypothetical situation was created: "The local administration office of Dubeč decides to build a park on selected land. Because it doesn't have enough money to build and run a park, the local residents will need to pay certain amount of money annually." The park in this scenario stands for a symbol of improved quality of the environment. The questionnaire should come up with answers whether local residents think or not that the developer´s project is harmful to the environment and the quality of their everyday life, whether and how much they will be willing to pay for increase in quality of the environment and their everyday life.

4.2 Creation of the questions

The questionnaire is created for purpose of asking local residents of Dubeč. It was created for the purpose of using in-person survey. It was designed for interviewing the respondents. The questionnaire is divided into three sections which are characterised below.

4.2.1 Section 1 – Demographic and socio-economic data

First section focuses on social and demographic data of population. The purpose of these questions was to establish a representative sample of residents. The goal was to divide the representative sample based on sex and age groups of population. Perfect representative sample was achieved by same proportion of males and females, and approximately same proportion of age groups. The population was divided into five age groups. First of all it was decided that only adult people may be a part of the research. It was presumed that children wouldn't be able to pay the fee annually. This obligation was transferred onto the parents. Education and employment were used for further analysis of the results.

In general, age groups in Dubeč can be described as follows:

- First group of residents from 18 to 29 years old are either students who live at parent´s house or students who are finishing or finished their studies and rent a small apartment in Dubeč. They are creating their future plans.
- Second group of residents from 30 to 39 years old are mostly people who built a family house or live in an original house. Their main purpose is to establish a family and settle down.
- Third and fourth group of residents from 40 to 59 years old are mainly people who already settled down. They care for Dubeč the most and its environment because they plan to stay here for their whole life and plan to prepare themselves for retirement there.

- Fifth group of residents over 60 years old are mostly people who are preparing themselves for retirement or are already retired. They live mainly in original housing areas, only few of them built a new family house and moved to Dubeč. They care for serenity and continuity of their everyday life.

This description of age groups and their preferences resulted in the answers in the questionnaire.

4.2.2 Section 2 – Current and future issues

The second section was focused on a comparison of current and future situation. The purpose of these questions was to find out whether residents think that the proposed project is or is not harmful to the environment. The goal was to search for general arguments on how the residents may or may not think that this project means deterioration of their everyday life. The questions were created as a pre-requisite for third section. The answers served as general arguments why people are or are not willing to pay for improvement of the environment.

First of all it was necessary to understand current problems in Dubeč. This part was easier because the author is a person who knows the village and due to his curiosity and awareness he is well-informed about current problems. The goal was to optimise the questions in a way that every respondent could understand it. It was not established for the purpose of going into technical details of the project and to ask people about soil quality or underground water problems. It was necessary to avoid "I do not know" answers and established the questions in a way that every respondent was able to answer yes or no. The questions were chosen according to everyday life of a resident. Creation of each question is discussed in paragraphs below.

The first question of second section is focused on current residential scenery. (See Questionnaire in Appendices, Section 2, Q1). The proposed project of the developer intends to build three-storey and four-storey housing premises on a land which is surrounded by family houses. Each respondent had the opportunity to see illustrated picture of the project (See Figure 18: Illustration of the proposed project (Official website of Ekospol, 2012). The main goal of question was to find out whether people think that the project is going to or is not going to disrupt the natural balance of the residential scenery and whether people put or do not put some importance on such environmental aspect.

The second question is focused on more general problem of Prague. (See Questionnaire in Appendices, Section 2, Q2). Constant building of housing and commercial structures on public green areas is an issue that every Prague district is facing. The purpose of this question was whether respondents agree or disagree with constant building on public green areas. Because the developer intends to build its project on public green area and requested area permit department to change the land into building ground, it is also current issue of Dubeč.

The rest of questions in second section are aimed at 10% increase in population of Dubeč. It is approximately increase by 300 residents. According to PBD, the village should ask itself whether it is ready for such increase.

The third question was established to directly ask residents whether they think that Dubeč and its services and facilities are ready for 10% increase in population. (See Questionnaire in Appendices, Section 2, Q3). The question was aimed at services and facilities like primary school, kindergarten and local market store. Local kindergarten on its website claims that its capacity is totally filled. Each year, the kindergarten is facing a huge number of applications. The demand for its services increases each year. The reconstruction of the building was made in 2010 and it extended the capacity of kindergarten by 50 children. Today, there are 160 children

in 6 different classes. (Official website of kindergarten, 2013). That is also why this question was created. Each respondent was asked to express his or her opinion and experience.

The fourth question is focused on the issue of public transport sufficiency and capacity during rush hours. (See Questionnaire in Appendices, Section 2, Q4). The author has direct experience with public transport in this area. Sometimes it is hard to find a place to sit, sometimes it is problem even enter the bus. Usually the bus is on time but sometimes it is late or even does not show up. Each bus must transfer passengers from other districts; Koloděje, Dolní Měcholupy and Hostivař to Skalka, the metro station. The issue of sufficiency of public transport is questionable. That is why this question was established. It is undoubtedly related to 10% increase in population of Dubeč.

The fifth question aimed on infrastructure, nearby crossroads and traffic during rush hours. (See Questionnaire in Appendices, Section 2, Q5). Those who do not travel by public transport, travel by car. Again, the question was established based on direct author´s experience with traffic in Dubeč and surroundings. Sometimes there is not a problem to pass the crossroads, sometimes the drivers remain in traffic jam. Traffic starts at 7 a.m. and grows larger every 10 minutes. The goal was to ask the respondents to express their opinion and experience. They were asked whether they think that nearby crossroads and traffic are ready for increase in tens of cars during rush hours. The proposed project counts with ninety-nine parking spaces so it is related to 10% increase of population.

The last question of second section is focused directly on issue of number of parking spaces. (See Questionnaire in Appendices, Section 2, Q6). As it was already mentioned, the project counts with ninety-nine parking spaces. In the introduction it is written, that the developer edited number of flats and parking spaces many times. According to civic association PBD, the proposed project has insufficient number of

parking spaces and the project will disrupt nearby housing areas and streets. It was one of the main arguments why PBD created the petition. The question was established to prove or disprove whether PBD´s opinion is shared among the residents. They were asked whether they think that Dubeč will suffer by increased number of cars parked in nearby housing areas.

4.2.3 Section 3 – Contingent valuation scenario, WTP section

Final third section follows second section of the questionnaire. It deals directly with the willingness to pay for improving the environment and quality of residents´ everyday life. To meet these goals, four questions were established to aim on willingness to pay.

First of all, every respondent was informed in details about hypothetical alternative situation. They were apprised with construction of a park in selected land. Because local administration office does not have enough money to build and run the park, local residents were informed that they will need to pay certain amount of money annually. In next step, the payment option was described in details. After that, every respondent was asked to answer the first question.

The first question is focused on realisation of hypothetical scenario. (See Questionnaire in Appendices, Section 3, Q1). Dubeč decided to build and run a park. Every resident was asked directly whether he or she would be willing to pay certain amount towards its construction and running costs. This question is the most important part of the research. Residents expressed their opinion in the second section of the questionnaire. Only those who were willing to pay annual fee, were asked further questions.

The second question is connected to previous one. (See Questionnaire in Appendices, Section 3, Q1a). Those respondents who were willing to pay annual fee,

were offered a wide range of answers. Because annual fee cannot exceed 1000 CZK, fees were rounded to hundreds. Every respondent had possibility to choose his or her preference to pay annual fee ranging from 100 to 1000 CZK. The question was established for purpose of defining specific annual fee based on the preference of respondents.

The third question aimed on payment preference of each person. (See Questionnaire in Appendices, Section 3, Q2). Two payment choices were created:

- Payment choice 1 is based on the preference of paying higher sum contribution. For those who would be willing to contribute with one-off higher sum at the beginning of the construction of a park, the annual fee would be smaller. In case that respondent chose this option, he or she was asked the last following question.
- Payment choice 2 is aimed for those respondents who would not be willing to pay one-off higher sum as a contribution. In that case, this preference would result in higher annual fee. Respondents who selected this payment choice were not asked further questions.

The last question of the questionnaire follows payment choice 1. (See Questionnaire in Appendices, Section 4, Q2a). Each respondent was asked to express his preference, how much he or she would be willing to contribute in one-off higher sum. These contribution sums were rounded to thousands and offered to respondents. It was assumed that those who are willing to pay higher one-off sum have higher need of realisation of the hypothetical scenario.

4.3 Collection and analysis of data

Questionnaire was created for the purpose of using in-person surveys. Each respondent was interviewed personally. The author went through all questions and gave detailed information to respondents about each section of the questionnaire.

Residents of Dubeč were informed about the intensions of Ekospol. Majority of them were already informed by civic association PBD before. The questions were set up in a way that everyone could understand it well and answer them without problems. No further explanations were needed. During each interview, the author was writing notes. The notes contained each comment of every respondent who was willing to further extend his or her answer to any question. Respondents were expressing their opinions and were adding arguments to any question. The notes were then used as the explanation of the results of each question.

The filled questionnaires were then rewritten into Microsoft Excel for the analysis. The analysis of the first section contained the quantity and the proportion of surveyed respondents (i.e. proportion of men and women, age groups etc.). The second section contained the quantity and the proportion of "yes" and "no" answers. Based on the proportion of these answers, the author created six figures to demonstrate the results. The third section analysis was using different filters to select specific groups of respondents. Based on these filters, it was computed the average WTP values for each specific group.

5 Results

5.1 Section 1 – Analysis of socio-demographic data

The survey was conducted in January 2013. The total amount of 62 people was interviewed. It represents 1.8 % of the total amount of residents of Dubeč. The representative sample was achieved by same proportion of males and females who were surveyed. The equal proportion can be seen in the Figure 2. The goal was to achieve the same proportion because of neutrality and equality of answers. It was necessary to avoid the influence of the result that may have been compromised by inequality between men and women.

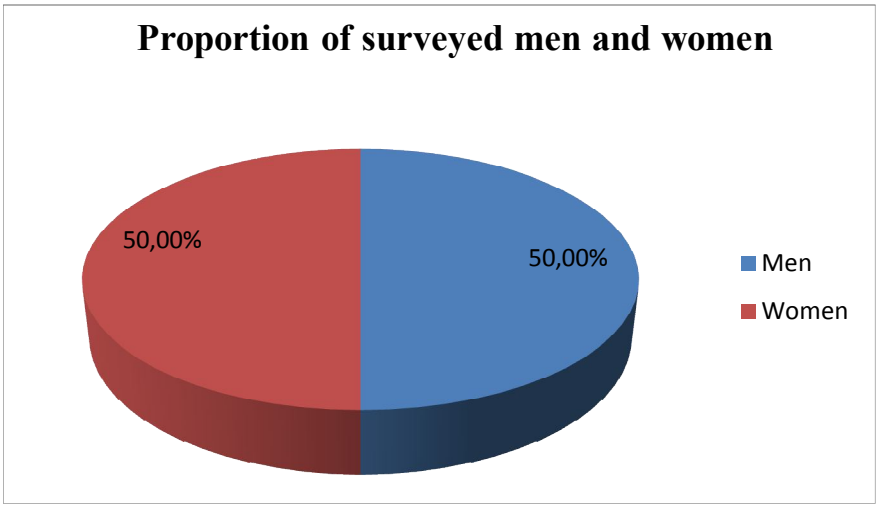

Figure 2: Proportion of surveyed men and women

The other goal to achieve the representative sample was through the proportion of the age groups. The age of residents was divided into 5 groups. It was aimed to achieve such proportion that reflects the real percentage proportion of people living in Dubeč. It was established based on author´s observation. The results are presented in Figure 3.

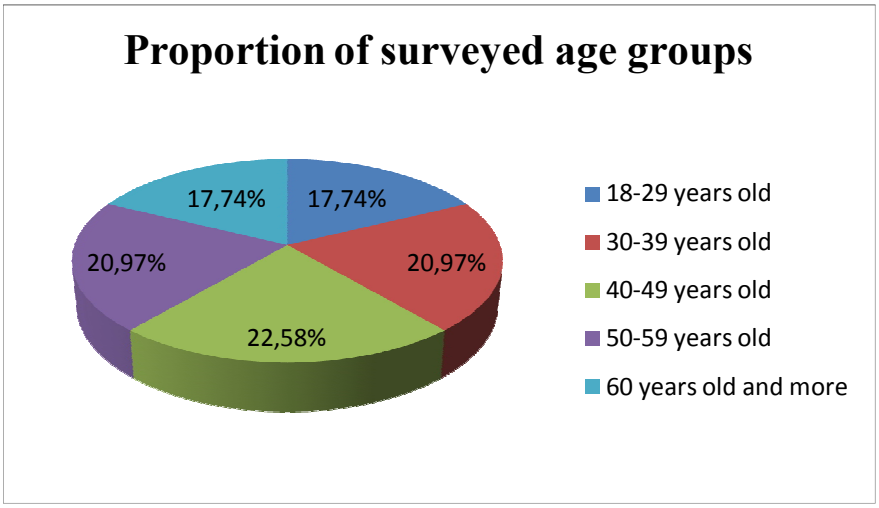

Figure 3: Proportion of age groups

Lower proportion of residents is represented by the first group of people from 18 to 29 years old and by the last age group over 60 years old. These groups have equal proportion of 17.74 %. It reflects the real lower representation of these age groups in Dubeč. On the other hand, higher proportion of residents is represented by

the age group from 40 to 49 years old. These residents forms majority in Dubeč, therefore the final proportion of these residents is 22.58 %.

Employment and education of respondents were not aimed at specific proportions such as age and sex differentiation. The results came up randomly. As we can see in Figure 4, the majority of residents from the surveyed sample had university or secondary education with certificate. Approximately 8 % of people from the surveyed sample had just basic education. The education data were used for detailed analysis in WTP section.

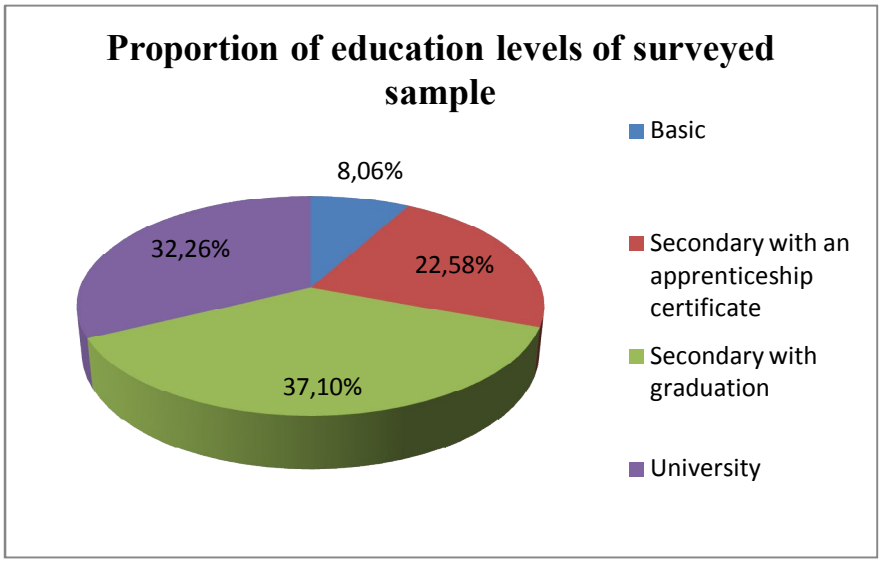

Figure 4: Proportion of education levels

Because over 64 % of respondents were in age groups between 30 and 59 years old, the employment statuses resulted in domination of being an employee or private entrepreneur. It is illustrated in Figure 5. Only 6.45 % of respondents were unemployed. In comparison with Figure 3, we see that 17.74 % of respondents were in the first age group from 18 to 29 years old. But only 9.68%, which is approximately a half of them, are still students. It means that this sample represents equality between the amount of students and working young people within thirty years old. The employment data were used for detailed analysis in WTP section as well as the education data.

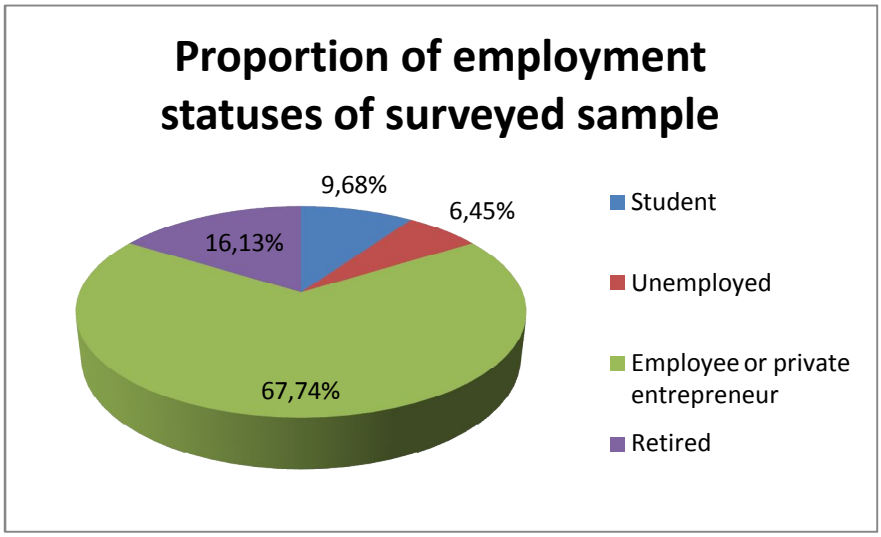

Figure 5: Proportion of employment statuses

5.2 Section 2 – Analysis of current and future issues

Disruption of natural balance of the residential scenery is one of the key issues of disagreement with the proposed project of the developer. It resulted in the questionnaire where majority of respondents think that the project is going to disrupt the residential scenery. It is shown in Figure 6. More than 87 % of respondent agreed that the project is harmful to the environment.

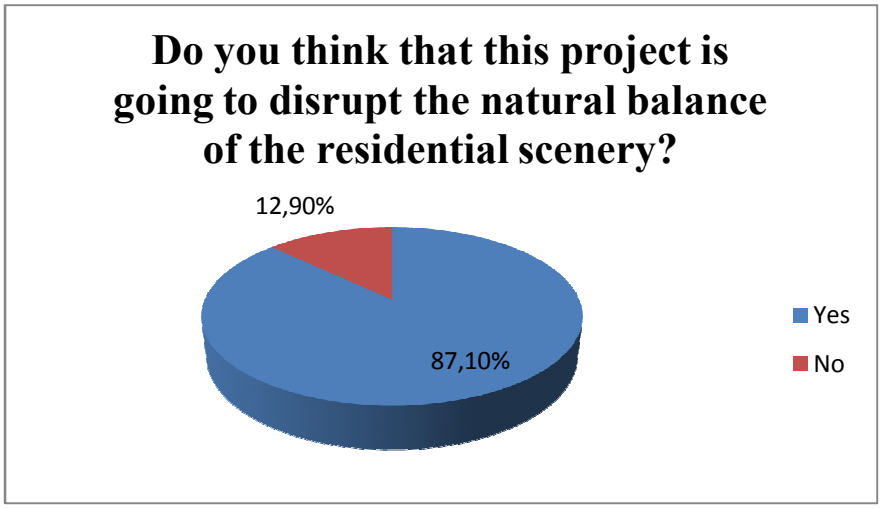

Figure 6: Disruption of the residential scenery

Families that live very close to this land claimed that the constructions of their family houses were designed to situate bedrooms and children´s rooms rather to have the view on the public green area than noisy street. When they decided to build the family houses they were verbally guaranteed that the public green area will never be used for construction of huge buildings like factories etc. The families did not expect that few years later the developer would buy the land and ask for change of area management plans (změna územního rozhodnutí). Other respondents claimed that it is unacceptable to build huge housing premises in an area which is settled by family houses. Such project would devastate the harmony of the environment and the amenity of everyday life of residents.

The next question focused on the issue of constant building of housing and commercial structures on green areas in Prague. The results are presented in Figure 7. Majority of respondents answered that they disagree with constant building of these structures on green areas. Almost 92 % of respondents imagined the green public area as a necessary part of every urban area. On the other hand, 8.06 % respondents imagined some wasted and unkempt green area in Prague. They claimed that it is better to build these lands over by any structures that may have some better use. Such wasted green area is useless and is a nuisance to everyone.

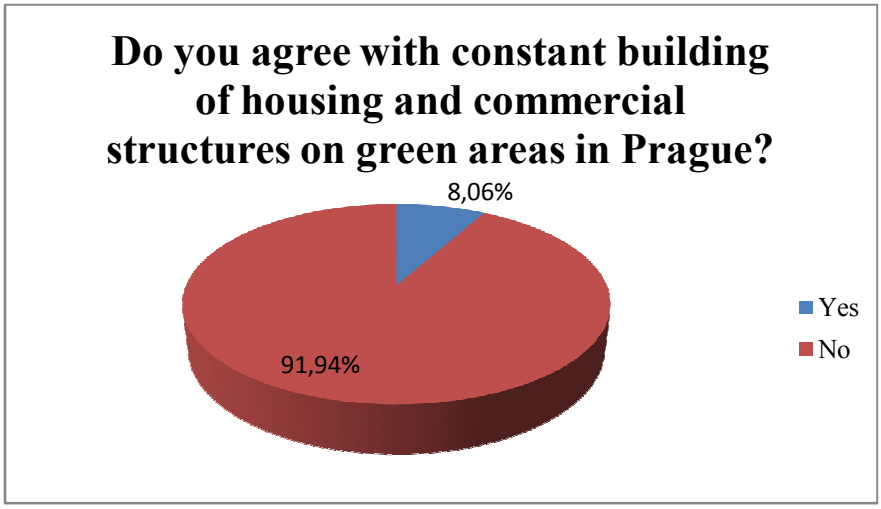

Figure 7: Constant building of housing and commercial structures on green areas

The rest of questions in second section were related to 10% increase in population of Dubeč. The respondents were asked whether Dubeč and its facilities and services are ready for such increase in population. The results are illustrated in Figure 8. The majority of respondents claimed that Dubeč is not ready. More than 80 % of respondents were pointing at the filled capacity of local kindergarten and primary school. These facilities were renovated in recent years and the capacity was extended. There is a high demand for kindergarten not only from Dubeč but also from nearby districts of Prague. On the other hand, 19.35 % of respondents had the opinion that Dubeč is ready for such increase. Almost all respondents agreed that the local store Tesco Express which was established few years ago is valuable asset in Dubeč. Such increase in population would affect Tesco store positively.

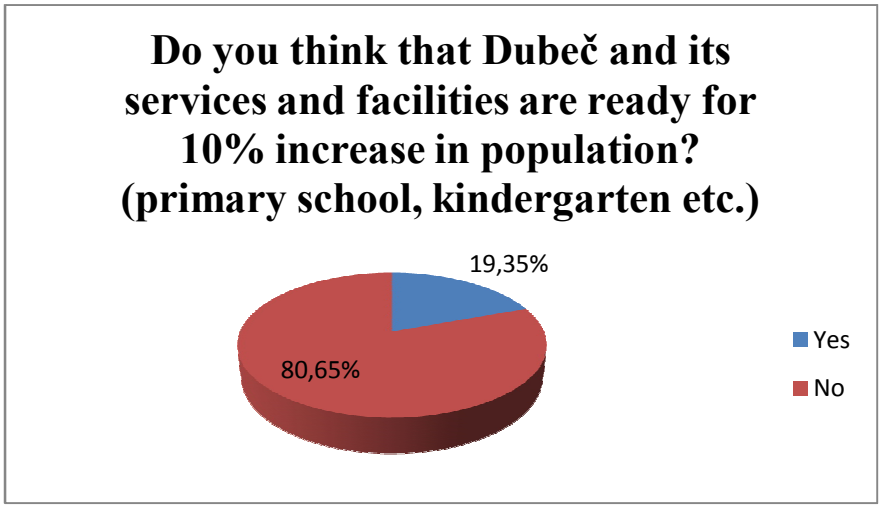

Figure 8: Preparedness of Dubeč for 10% increase in population

The next question concerned the sufficiency of public transport during rush hours in Dubeč. The results are presented in Figure 9. Majority of respondents agreed that the capacity of public transport is insufficient. They were pointing on the current issues when the buses are getting over-crowded. The problem is that the buses transfer passengers also from other districts of Prague. If the capacity of the bus is filled in Dubeč or Koloděje then other passengers living closer to the metro station have difficulties to find a place in the bus. On the other hand, if there are no traffic complications or road reparations the buses always have a seat for new incoming passengers. The travel by bus is then more uncomfortable but it is exceptional if

some passengers remain on bus stop. The problem is that it is description of current situation. It does not count with 10% increase in population of Dubeč. Situation could be more complicated in future.

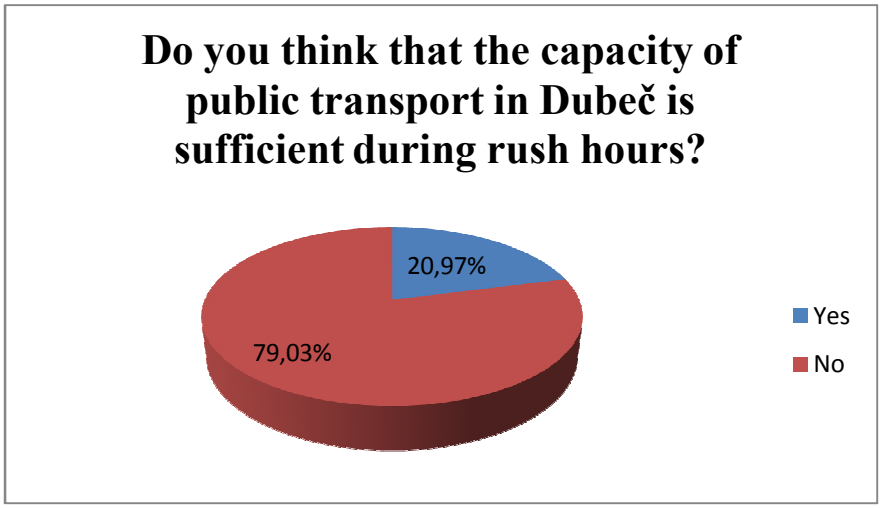

Figure 9: Sufficiency of public transport in Dubeč

Current infrastructure and situation on nearby crossroads was discussed in fifth question of the second section. As you may see on Figure 10, majority of respondents claimed that current infrastructure is not ready for increase in traffic by tens of car during rush hours. Many respondents claimed that the current situation is unbearable especially in the morning. They are delayed by traffic jams by tens of minutes. They criticise current condition of the roads. Such damaged roads cannot withstand current numbers of cars.

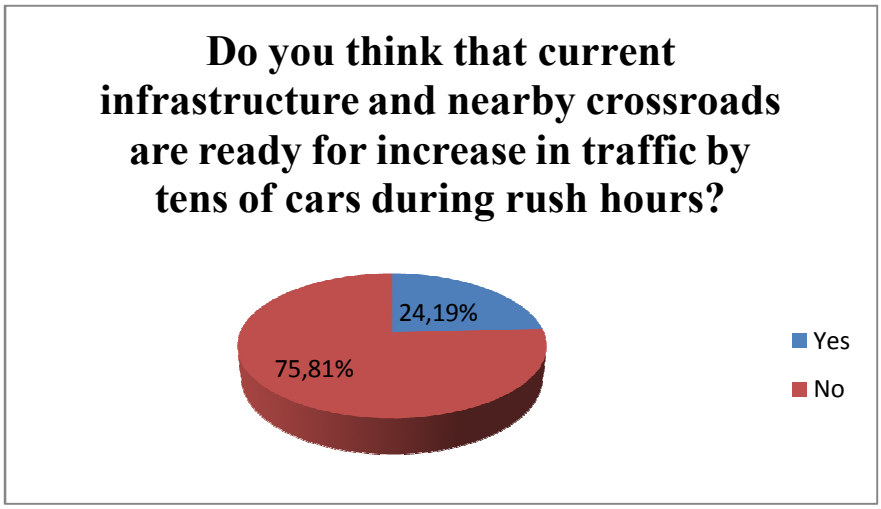

Figure 10: Preparedness of infrastructure and nearby crossroads

Increase in number of cars is also related to the last question of the second section of the questionnaire. Because the developer changed number of parking spaces many times, the concerns raised about the issue of insufficient number of parking spaces for the proposed project. Local residents believe that it will have direct impact on them. As it is presented in Figure 11 72.58 % of respondents think that Dubeč will suffer by increased number of cars parked in nearby streets and housing areas.

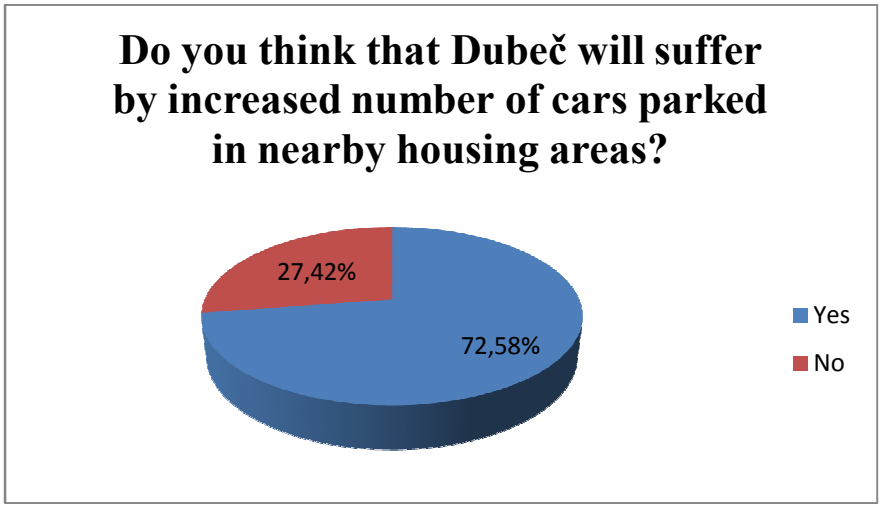

Figure 11: Suffering from increased number of cars parked in housing areas

5.3 Section 3 – Analysis of Willingness-to-Pay section

The third section focused on resident´s willingness to pay for enhancement of residential area. From the total amount of 62 respondents, who were interviewed, 54 respondents were willing to pay a certain amount every year towards the constructive and running costs of a park. It represents 87.1 % of residents. The illustration of the results can be seen in Figure 12.

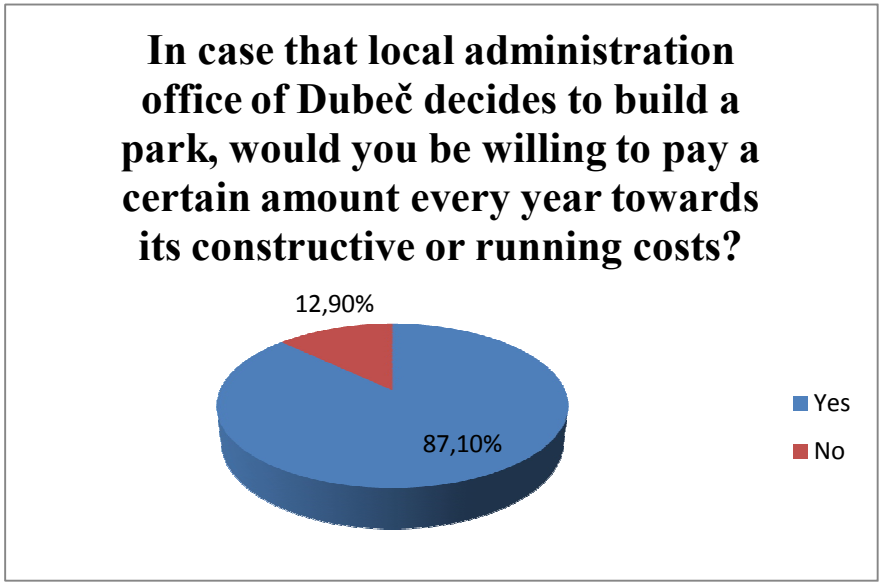

Figure 12: The proportion of WTP

The results are presented in Figure 13. The average amount of money that resident are willing to pay annually was equal to 504 CZK. Multiplied by the number of residents of Dubeč we got total WTP per year which is equal to 1,733,256 CZK. Earnings of Dubeč in 2011 were 18,735,510 CZK. (Zápis ze zasedání ZMČ Praha-Dubeč, 2012). The total WTP per year would mean 9.25% increase in earnings of Dubeč annually.

Figure 13: Application of WTP in the budget of Dubeč

The average WTP per capita per year	**504 CZK**
Number of residents in Dubeč	3,439
Total WTP per year	1,733,256 CZK
Earnings of Dubeč in 2011	18,735,510 CZK
Increase in earnings of Dubeč	9.25 %

The comparison of the average WTP that is based on age groups is presented in Figure 14. As was assumed, the average WTP is the highest among group of residents from 30 to 59 years old. These residents have potential to earn more money therefore the household income is higher. Expected lower average of WTP resulted among group of residents from 18 to 29 years old and among group of residents over 60 years old. These residents potentially earn less money due to their studies or short working period. On the other hand, retired people have limited income therefore they would spend less amount of money every year.

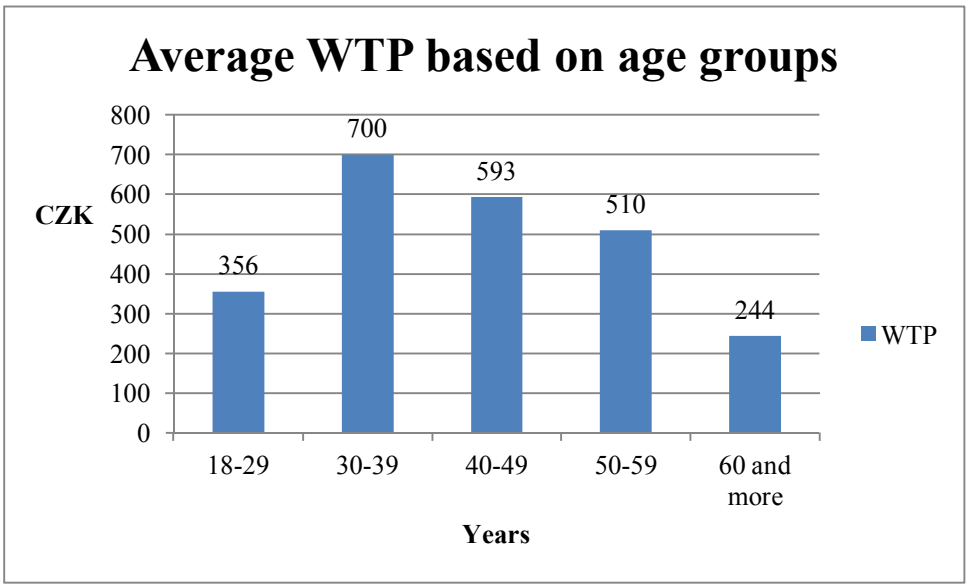

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Figure 14: Average WTP based on age groups

H

The amount of average WTP also differs among different education levels. It is illustrated in Figure 15. The residents with the university education were willing to pay higher annual fee. The average amount of 765 CZK per year greatly exceeded the amount that other residents with lower education levels were willing to pay. In this case, the results presented that people with higher education were willing to pay higher amount of money each year.

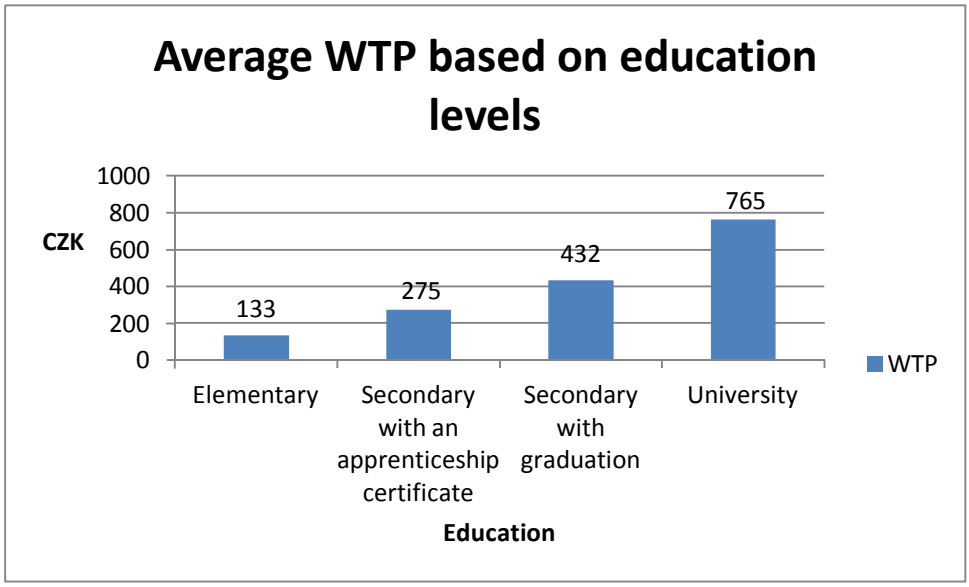

Figure 15: Average WTP based on education levels

Differences between the average amounts of WTP could be found also among different employment statuses. Results are presented in Figure 16. Group of residents who are employees or private entrepreneurs were willing to pay higher average amount every year. On the other hand, retired and unemployed people were willing to pay lower amount or even were not willing to pay at all. Students were willing to pay more than unemployed or retired people. The average amount was 320 CZK.

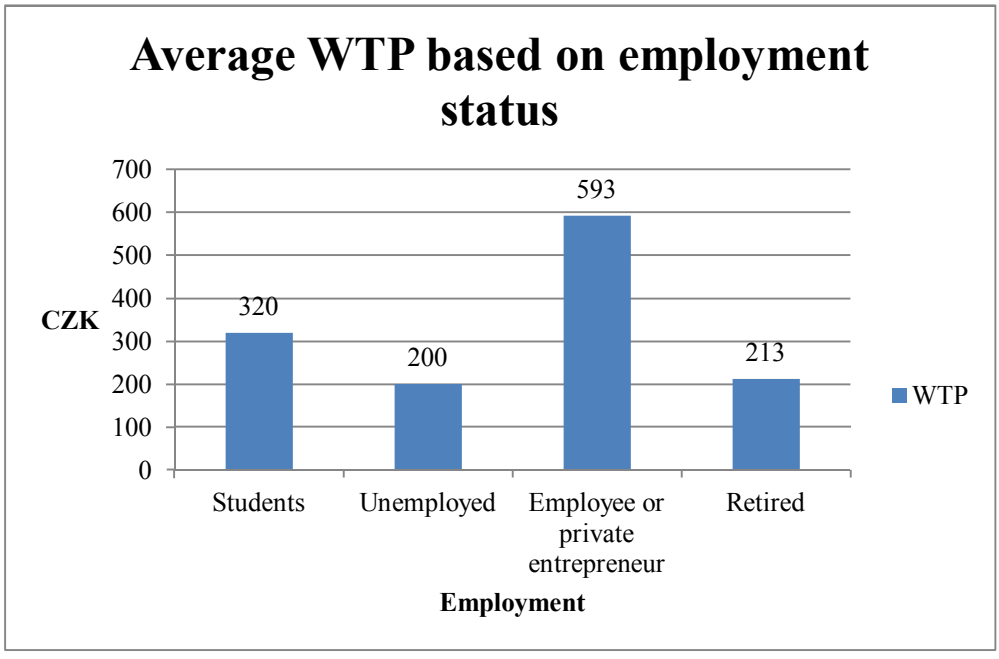

Figure 16: Average WTP based on employment status

Residents were asked about their payment preference. They were offered two payment choices. They could choose to pay higher one-off sum contribution at the beginning and then pay smaller annual fee or they could choose to pay higher annual fee in case that they are not willing to contribute a higher one-off sum at the beginning. The results of payment preferences are shown in Figure 17. 57.41 % of respondents would have chosen first payment option. On the other hand, 42.59 % would have chosen second payment option. The main reason of selecting second payment option was due to low confidence that residents´ contribution would be visible in a park. These respondents saw the contribution as pointless investment. On the other hand, those who selected the first payment option were willing to contribute towards the construction cost of a park. They claimed that the sooner the park would be built, the better. The average amount that people were willing to contribute in one-off sum was 4,935 CZK.

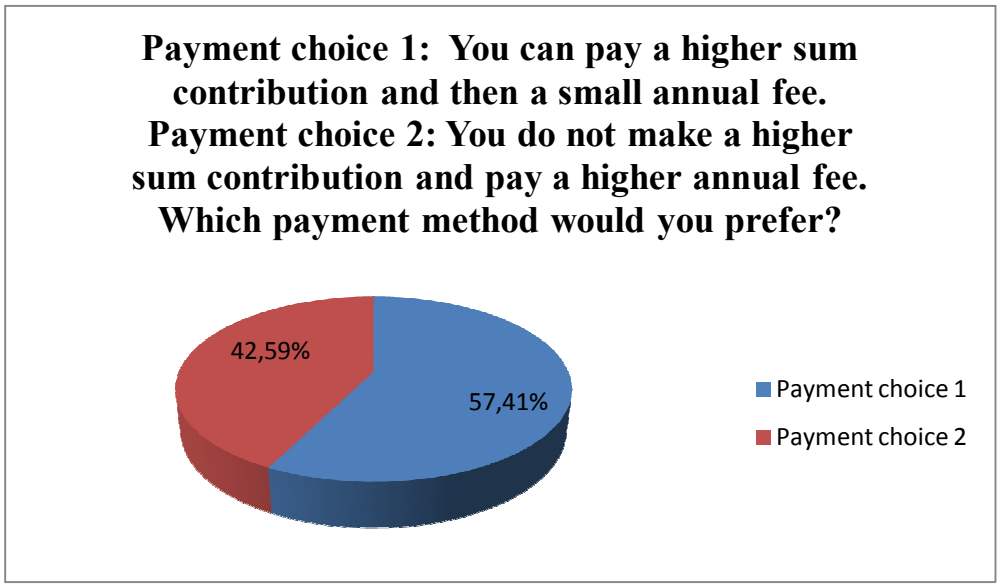

Figure 17: Proportion of residents´ payment preferences

6 Discussion and recommendation

According to Kolstad (1999), the greatest criticism of Contingent valuation method lies in its hypothetical nature. Kolstad used as an example a CV study in Norway where people were asked whether they are willing to pay 200 Norwegian Kroner to NNV to protect Norwegian environmental resources. The result of the CV study was that 63 % respondents were willing to contribute. When NNV contacted the group of people with no reference to this CV study, less than 10 % of people were willing to contribute to protect Norwegian environmental resources. The CV study focused on Case Study Dubeč came out with data that 87.1 % respondents from surveyed sample are willing to pay in average 504 CZK annually to enhance the residential area. Respondents were expressing their willingness to pay for a hypothetical scenario with no real money at stake. If local administration office would ask the residents whether they would pay the annual fee for enhancing the residential area, there is a risk that much smaller percentage of people would be willing to pay annual fee when the real money is at stake. Such criticism of Contingent Valuation Method may cause that the CV study is unreliable. However, people put the value on environment and expressed the preference of the hypothetical scenario against the proposed project of the developer. These are the main advantages of CV study.

7 Conclusion

The CV study of Dubeč revealed the willingness of residents to pay for enhancement of residential area. Majority of respondents (87.1 %) from the surveyed sample were willing to pay for realisation of a park against the construction of the proposed project of Ekospol. The hypothetical realisation of a park was proposed as the enhancement of the residential area in Dubeč which should improve the environment and the quality of residents´ everyday life. Most of respondents saw the hypothetical scenario as a preservation of quality of their everyday life. The proposed project of Ekospol would deteriorate the environment. Dubeč as a Prague district is not ready for 10% increase in population (opinion of 80.65 % of respondents). Capacity of local facilities and services are filled except the supermarket. According to 79.03 % of respondents, the public transport is insufficient during rush hours. Current traffic situation is not ready for increase in its density during rush hours (opinion of 75.81 % of respondents). The roads are in a poor condition and cannot withstand the increase in number of cars by tens. The capacity of roads is being filled constantly and the situation is becoming critical. Majority of respondents (87.1 %) think that the proposed project would disrupt the natural balance of residential area and 91.94 % of respondents disagree with constant building of housing and commercial structures on green areas in Prague. According to the CV study, residents are rather willing to pay certain amount every year as a contribution to construction and running costs of a hypothetical park to prevent the deterioration of current situation in Dubeč and its surroundings. The respondents were willing to pay 504 CZK annually in average. Respondents between 30 and 39 years old were willing to pay the highest annual amount (700 CZK in average). Those who had university education would pay 765 CZK per year in average. Respondents who were employees or private entrepreneurs were willing to pay higher amount (593 CZK in average) than students, unemployed or retired people.

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Zápis ze zasedání ZMČ Praha-Dubeč, 25.6.2012

9 Appendices

Figure 18: Illustration of the proposed project (Official website of Ekospol, 2012)

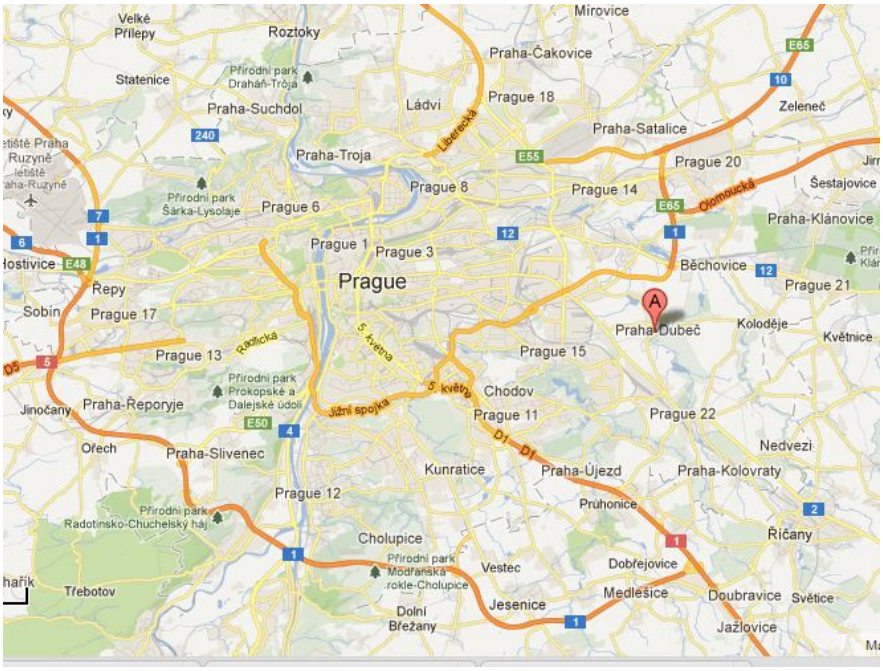

Figure 19: Location of Dubeč (Google Maps, 2013)

Questionnaire in English

Section 1

Sex:

- ☐ 1 - Male
- ☐ 2 - Female

Age:

- ☐ 1 - 18 to 29 years old
- ☐ 2 - 30 to 39 years old
- ☐ 3 - 40 to 49 years old
- ☐ 4 - 50 to 59 years old
- ☐ 5 - over 60 years old

Education:

- ☐ 1 - Elementary
- ☐ 2 - Secondary with an apprenticeship certificate
- ☐ 3 - Secondary with graduation
- ☐ 4 - University

Employment:

- ☐ 1 - Student
- ☐ 2 - Unemployed
- ☐ 3 - Employee or private entrepreneur
- ☐ 4 - Retired

Section 2

The second section of questions should come up with answers why people think that this project is harmful to the environment and why they think this project means deterioration in quality of their life. I would like to find the reasons why people would be willing to pay certain amount of money to improve the environment and their quality of life.

Q1 – Do you think that this project is going to disrupt the natural balance of the residential scenery?

- ☐ 1 - Yes
- ☐ 2 - No

Q2 - Do you agree with constant building of housing and commercial structures on green areas in Prague?

- ☐ 1 - Yes
- ☐ 2 - No

The developer´s project will increase the population of Dubeč by 10 % (approximately by 300 residents).

Q3 - Do you think that Dubeč and its services and facilities are ready for 10% increase in population? (primary school, kindergarten etc.)

- ☐ 1 - Yes
- ☐ 2 - No

Q4 - Do you think that the capacity of public transport in Dubeč is sufficient during rush hours?

- ☐ 1 - Yes
- ☐ 2 - No

Q5 - Do you think that current infrastructure and nearby crossroads are ready for increase in traffic by tens of cars during rush hours?

- ☐ 1 - Yes
- ☐ 2 - No

Q6 - Do you think that Dubeč will suffer by increased number of cars parked in nearby housing areas?

- ☐ 1 - Yes
- ☐ 2 - No

Section 3

Please imagine that local council would be willing to build a park in selected area. Park is a symbol of improved quality of environment and quality of life. Because local council of Dubeč does not have enough money to build and run a park, the local residents will need to pay certain amount every year. These questions should come up with answer whether and how much are the residents willing to pay to increase the quality of environment and their life every day.

Q1 - In case that local administration office of Dubeč decides to build a park, would you be willing to pay a certain amount every year towards its constructive or running costs?

- ☐ 1 - Yes, I would be willing to pay certain amount every year.
- ☐ 2 - No, I would not be willing to pay certain amount every year.

(If No, do not ask further questions).

Q1a - As you know local council does not have enough money to build and run a park, therefore residents of Dubeč will need to pay certain amount every year. How much would you be willing to pay every year? (CZK) (Assume that this annual fee does not exceed 1000 CZK).

- ☐ 1 - 100 CZK
- ☐ 2 - 200 CZK
- ☐ 3 - 300 CZK
- ☐ 4 - 400 CZK
- ☐ 5 - 500 CZK
- ☐ 6 - 600 CZK
- ☐ 7 - 700 CZK
- ☐ 8 - 800 CZK
- ☐ 9 - 900 CZK
- ☐ 10 - 1000 CZK

Q2 - There are two options, please choose one of them.

Payment choice 1: You can pay a higher sum contribution and then a small annual fee.

Payment choice 2: You do not make a higher sum contribution and pay a higher annual fee.

Which payment method would you prefer?

- ☐ 1 - I would prefer payment choice 1: to pay an upfront contribution and then pay a smaller annual fee.
- ☐ 2 - I would prefer payment choice 2: to pay a higher annual fee and not to pay an upfront contribution.

(If respondent selects payment choice 2, do not ask further questions).

Q2a – How much are you prepared to contribute, in a one-off higher sum, for the construction of a park?

- ☐ 1 – 1000 CZK
- ☐ 2 – 2000 CZK

- ☐ 3 – 3000 CZK
- ☐ 4 – 4000 CZK
- ☐ 5 – 5000 CZK
- ☐ 6 – 6000 CZK
- ☐ 7 – 7000 CZK
- ☐ 8 – 8000 CZK
- ☐ 9 – 9000 CZK
- ☐ 10 – 10000 CZK and more

Questionnaire in Czech

Sekce 1

Pohlaví:

- ☐ 1 – Muž
- ☐ 2 – Žena

Věk:

- ☐ 1 – 18-29 let
- ☐ 2 – 30-39 let
- ☐ 3 – 40-49 let
- ☐ 4 – 50-59 let
- ☐ 5 – 60 let a více

Vzdělání:

- ☐ 1 – základní
- ☐ 2 – vyučen(a) bez maturity
- ☐ 3 – s maturitou
- ☐ 4 – vysokoškolské

Pracovní poměr:

- ☐ 1 – student
- ☐ 2 – nezaměstnaný
- ☐ 3 – zaměstnanec nebo podnikatel
- ☐ 4 – důchodce

Sekce 2

Druhá sekce otázek se zaměřuje na odpovědi, proč a jestli si lidé myslí, že by tento projekt uškodil životnímu prostředí a proč a jestli si myslí, že tento projekt by znamenal snížení kvality jejich každodenního života.

1 – Myslíte si, že tento projekt bude narušovat charakter okolní zástavby?

- ☐ 1 – ano
- ☐ 2 – ne

2 – Souhlasíte s neustálým zastavováním zelených ploch v Praze obytnými a obchodními stavbami?

- ☐ 1 – ano
- ☐ 2 – ne

Projekt developera zvýší počet obyvatel v Dubči o 10 % (přibližně o 300 obyvatel).

3 – Myslíte si, že Dubeč a její služby jsou připraveny na 10% nárůst obyvatel? (škola, školka atd.)

- ☐ 1 – ano
- ☐ 2 – ne

4 – Myslíte si, že kapacita veřejné dopravy v Dubči je ve špičce dostačující?

- ☐ 1 – ano
- ☐ 2 – ne

5 – Myslíte si, že současná infrastruktura a blízké křižovatky jsou připraveny na zvýšený počet aut o několik desítek během špičky?

- ☐ 1 – ano
- ☐ 2 – ne

6 – Myslíte si, že Dubeč bude trpět vyšším počtem aut, která by parkovala v okolních silnicích a obytných zónách?

- ☐ 1 – ano
- ☐ 2 – ne

Sekce 3

Představte si prosím, že by Úřad městské části Praha Dubeč byl ochoten na pozemku postavit park. Park by byl symbol zvýšené kvality životního prostředí a kvality života. Protože úřad nemá dostatek peněz na vybudování a provoz parku, místní obyvatelé by museli platit nějaký roční poplatek. Třetí sekce otázek je zaměřena na

ochotu či neochotu lidí platit za zlepšení životního prostředí a kvality jejich každodenního života.

1 - V případě, že by se Úřad městské části Praha Dubeč rozhodl vybudovat park, byl(a) byste ochoten/ochotna platit nějakou částku ročně na vybudování a provoz parku?

- ☐ 1 - Ano, byl(a) bych ochoten/ochotna platit nějakou částku ročně.
- ☐ 2 - Ne, nebyl(a) bych ochoten/ochotna platit nějakou částku ročně.

(pokud ne, neodpovídejte na další otázky).

1a - Jak už víte, Úřad městské části Praha Dubeč nemá dostatek peněz na vybudování a provoz parku, proto by obyvatelé Dubče museli platit nějakou částku ročně. Kolik byste byl(a) ochoten/ochotna platit ročně? (Předpokládejme, že roční poplatek by nepřesáhl 1000 Kč).

- ☐ 1 – 100 Kč
- ☐ 2 – 200 Kč
- ☐ 3 – 300 Kč
- ☐ 4 – 400 Kč
- ☐ 5 – 500 Kč
- ☐ 6 – 600 Kč
- ☐ 7 – 700 Kč
- ☐ 8 – 800 Kč
- ☐ 9 – 900 Kč
- ☐ 10 – 1000 Kč

2 – Existují dvě možnosti, prosím, vyberte jednu:

Platební možnost 1: Můžete zaplatit vyšší jednorázový příspěvek a poté platit menší roční poplatek.

Platební možnost 2: Nemusíte zaplatit vyšší jednorázový příspěvek a poté budete platit vyšší roční příspěvek.

Kterou platební možnost byste upřednostnil(a)?

- ☐ 1 – Upřednostnil(a) bych platební možnost 1: zaplatit vyšší příspěvek poté platit menší roční poplatek.
- ☐ 2 – Upřednostnil(a) bych platební možnost 2: neplatit žádný vyšší příspěvek a platit vyšší roční poplatek.

(pokud respondent zvolil platební možnost 2, neptejte se na další otázky).

2a – Kolik byste byl(a) ochoten/ochotna přispět jednorázovou sumou na vybudování parku?

- ☐ 1 – 1000 Kč
- ☐ 2 – 2000 Kč
- ☐ 3 – 3000 Kč
- ☐ 4 – 4000 Kč
- ☐ 5 – 5000 Kč
- ☐ 6 – 6000 Kč
- ☐ 7 – 7000 Kč
- ☐ 8 – 8000 Kč
- ☐ 9 – 9000 Kč
- ☐ 10 – 10000 Kč a více