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Extended abstract

Evaluation of drinking water consumption by households in the CR

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Evaluation of drinking water consumption by households in the Czech republic

Summary

The bachelor thesis focuses on the evaluation and description of current drinking water consumption with a focus on households in the Czech Republic. The goal of this work is to find the most influencing determiner in our households measured by consumption, as well as prove that our drinking water consumption can be lower than it already is.

The thesis is divided into two parts. The first theoretical part for water issue defines and introduces basic terms about water consumption and their types. Water economy, such as demand, supply, inelasticity and price stability. It also discusses the water industry, usage of water and water quality requirements. In-depth analysis will be used which will provide understating for the second part.
The second, analytical part, evaluates results based on quantitative research in my own case study on water treatment in Czech households and their evaluation. This is followed by research of my own consumption of drinking water.

Key words: water consumption, drinking water, externalities, households, Czech republic, economics, water industry

Introduction

Dealing with water issues in today's world is one of the most important topics to discuss.
Society's dependence on water and economical aspects in an environmental view is more than clear in this area. There is plenty of water in the world, but this statement is not true for drinking water, which can be consumed by people. Due to the increasing price of water and the increasing number of people living on this planet it is time to think about water usage and water saving behavior.

I have been interested in water scarcity for a long time, therefore I chose this topic as the theme for my bachelor thesis.
This bachelor thesis focuses on drinking water consumption in households in the Czech Republic and proving that our drinking water consumption can be lower than it is.

The work is divided into two parts. The theoretical part, where basic terms and terminology are explained as well as the economical properties of water, which includes supply, demand, price stability or inelasticity. It also deals with the water industry in the Czech Republic and issues connected with water pipelines and water quality requirements.

In the analytical part of this thesis the author will be focused on a case study concerning the drinking water consumption in a neighborhood, in his family and research on his own consumption of drinking water. The author will be using quantitative methods in primary and secondary data research.

The first part of the case study will process and evaluate data from a building, where six families are living and the data can be proved to be very solid and relative.

The second part will be focused on the author's family's drinking water consumption and the price for each water activity.

The last part of the analytical section will consist of the author's self-research of drinking water consumption done on himself.

Thesis objectives and methodology

The aim of this thesis is to give a general overview of water consumption in the Czech Republic. The theoretical part consists of base terminology, types of water consumption, the water industry, the quality of drinking water, water laws and decrees.
The analytical part is focused on the evaluation of water consumption and proving that our consumption can be lower than it is nowadays. Used data will be collected with the help of primary data research.

The basis of the theoretical part is based on professional books found, which deal with the water industry in the Czech Republic and refer to water laws and acts. Materials for this topic are hard to find as there are little available. Especially when the work requires actuality. In this case the theoretical part is completed with the help of web presentations and books in PDF format. Trustworthy web pages such as Ministry of Agriculture, Ministry of the Environment, statistical office or OECD have been used.

In the first topic of the analytical part, water consumption during the last 10 years is evaluated. Linear trend lines are used in the analysis. Data obtained by primary data research and their evaluation with graphs and correlation analysis are used for the next topics. This type of obtaining data was chosen because of their fitness to the research and high level of control while the data is collected.

Conclusion

Drinking water, even though in our climatic belt is everywhere, is a very rare raw material. With this knowledge, everyone should manage their consumption of drinking water well, because it matters. Prices of this essential commodity have rapidly increased in the last 20 years.

An important aim of this thesis was to describe and show the increasing prices of drinking water as well as the consumption itself. The author focused on actual

drinking water consumption in Czech households and types of consumption, which have been demonstrated in the analytical part.

Secondary data research and the evaluation of the data confirms that the consumption of drinking water collected in apartments showed an increasing trend of water usage up until the year 2011. Since the year 2011 the data has been decreasing. In comparison, the consumption of drinking water in the apartments shows that water saving behavior matters with a high difference in cubic liters consumed and price paid.

Using the correlation analysis, it is demonstrated that there is no connectivity between air temperature and drinking water consumption in the apartments without a garden, pool and place to wash the car.

An example of consumer consumption by unit - in this case toilet flushing, shows huge differences between a dual flush system and a single flush system. The price annually reaches the value of 1371,5 CZK when comparing a single flush system and a dual flush system with “saving mode” used by 4 people. With this price, the payback period would be 3,03 years, if a whole set of a dual flush system is bought for the price of 3290 CZK.

Based on primary data research collection of drinking water consumption over the 10 days of the author’s experiment, a difference between using the “saving mode” or the “normal mode” was found. The consumption differed by 58,1 liters per day per capita. This is an annual value of 21,2 cubic liters.

Last but not least is the usage of rainwater and its suggestibility. We can replace drinking water with rainwater in almost 40% of our consumption – mainly in toilet flushing and with the use of the washing machine. If an investment into new rainwater appliances can’t be made, we can still think about influencing our water consumption as influenced consumption of water could be almost 30%.

If consumers want to pay the same prices for water despite continually rising prices of water and sewer rates, decreasing their consumption or investing into economically friendly appliances is the only way.

In conclusion, it is important to remember that we are consuming **drinking water** in the daily household activities that are written in the above thesis.

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