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of Economics
in Katowice



International Centre of Research
Excellence in Transition of Coal
Regions (ExCORE)

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FINAL RESEARCH REPORT

TITLE OF THE PROJECT

The value of clean air: willingness to pay for mortality mitigation

TEAM

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Development of project proposal

The project was developed during Hackathon. Our motivation to take up this topic was the small number of publications dealing with this problem in the context of Europe, especially the eastern-central part of Europe. For years, Poland was a highly industrialized country, especially in its southern part. Until now, the inhabitants of this country are struggling with air pollution, which is still increasing due to climate change. The valuation of a public, non-market good is based primarily on society's declarations of willingness to pay for a given good. Knowing the price for clean air can be the basis for further actions by decision-makers at the government level and increase residents' awareness of caring for the common good.

The presentation during Hackaton - appendix no 1

Further presentations of the project:

- (1) University of Southampton study visit - appendix 2

During this event, the concept of our project and the proposed research methodology were presented. Moreover, the expected research results and their contribution to filling the existing research gap are presented. Thanks to the valuable comments of professors from the University of Southampton, corrections and improvements were made to the concept of our project.

- (2) University of Bari / 10th European Risk Conference Conference - appendix 3

Another project proposal, enriched with a research tool (survey), was presented during the 10th European Risk Conference at the University of Bari in Italy. The presentation and comments of the mentors resulted in the improvement of the research tools through its modification and implementation of element specifications, which ultimately helped to gain a broader research perspective at a later stage.

- (3) University of Verona - appendix 4

During this meeting, our team had access to preliminary research results and analysis results. Our presentation was made by mentors separately from the universities of Verona and the University of Bari, with detailed modifications within the analyzed research results.



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(4) Final conference in Katowice - appendix 5

The final version of our research was presented at this conference, along with detailed results and analyses. After its presentation, the team received important comments from: professors from Southampton and mentors from the University of Bari. These suggestions concern minor corrections to the prepared article, which was ultimately submitted to a high-scoring, international magazine.

Outcomes of the project work:

The conducted research aimed to fill the gap in the existing literature by examining society's willingness to pay for clean air in a Central and Eastern European country. These studies took into account in particular aspects related to climate change and the possibility of reducing mortality due to improved air quality. The innovation is the combination of two methods: Value Belief Norm Theory and Willingness To Pay, thanks to which the result is not only an estimate of the average price for clean air, but also the ability to determine the beliefs that guide people in their choices. These results could significantly assist in further policymaking to address climate change. By applying CVM and VBN in Polish context we provide the up-to-date estimates of WTP for clean air and its direct and indirect antecedents to support the environmental policies in Poland. We believe that our study provides some vital contribution both on theoretical as well as practical level. We conducted a survey among 1,000 households throughout the country selected through the BioStat® Research and Development Center and used a number of analyses, including the most important ones: PCA (Principal Component Analysis) and EFA (Exploratory Factor Analysis). We found that the average WTP equals PLN 33.27 (0.61% of the monthly net average income). It can be observed that the declared maximum payment differs significantly when the grouping based on: age, level of education, level of income, workplace and having children under 18 is taken into account. The statistical tests also proved that education influences peoples' behavior regarding WTP.

The ultimate outcome of our project is a paper "The value of clean air: willingness to pay for mortality mitigation" Rafał Buła, PhD; Monika Foltyn-Zarychta, Ph.D. habil.; Paulina Badura, MA; Adéla Brázdová, Ph.D.; Kingsley Ikani, MA

The paper was submitted to **Ecological Economics**. . Journal Impact Factor: 6.6 , CiteScore: 12.0. The paper is in the revision process.

The documents that confirm the submission - appendix 6



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