

Air pollution has become a growing concern in the past few years, with an increasing number of acute air pollution episodes in many cities worldwide. The United Nations has identified air pollution as a global health priority in the 2030 Agenda for Sustainable Development. Many countries, including Poland, suffer from air pollution and smog experiencing significant damages to both human health and economy. According to the World Health Organization air pollution is the biggest environmental risk to health as it is said to be responsible for 3 million premature deaths each year and numerous health problems. In terms of poor air quality, Poland is ranked second in the European Union just after Bulgaria. The problem of air pollution began to be more noticed in a public discussion with more and more frequent cases of smog appearance - mainly in cities.

In order to develop effective interventions and policies for tackling air pollution, decision makers have to be informed about full social cost of air pollution. However, negative effects on health caused by the exposure to air pollution are not directly reflected in market prices. Economics has developed methods to assess the value of nonmarket goods as the air pollution quality in monetary terms. Thus, especially stated preferences have been increasingly used for such valuations because of the possibility to obtain detailed information on individuals' preferences, as well as to investigate the social acceptance of proposed policy changes.

In this project we would like to value in monetary terms the health benefits from reductions in air pollution and smog in different Polish cities. We are interested whether, and if yes, to what extent aspects of environmental justice, pro-environmental behaviour and information influence the valuation of the air pollution and smog reduction in the health context. Smog is more dangerous to human health than "usual" low-level emissions and some of its' effects are immediately noticeable, therefore this valuation may differ from a standard air pollution valuation.

Smog is a type of air pollution. It arises out of primary pollutants and products of their photochemical and chemical transformations occurring under temperature inversion during windless weather. Photochemical smog is formed during strong sunlight. Sour smog arises in moist air strongly polluted by acid gases and occurs mainly in regions where houses are heated by burning coal and other solid fuels. Smog in Polish cities occurs mainly during the winter when air quality standards in Poland are repeatedly exceeded. The main reason for this is the so-called low-stack emission, i.e. emission from chimneys with a height lower than 40m and road transport emissions. Poland's hitherto activities concerning air quality are focused mainly on mitigation of negative effects, rather than on the air pollution reduction.

As far as we know, the proposed study is going to be the first nonmarket valuation study on smog reduction in European countries. Additionally, probably as the first we are going to analyse the impact of pro-environmental behaviour and environmental justice on air-pollution valuation. This is also going to be the first valuation study where the social benefits from reduced air pollution and smog will be implemented jointly in the same study, and where the smog reduction will be presented to respondents as an uncertain outcome – taking into account the weather forecasts predictions. The methodological novelty of this project lies in the way we combine a Factorial Survey Experiment and a Discrete Choice Experiment and in the way we are planning to implement different information sets in the valuation survey.