

## **Willingness to Pay for Better Air Quality: The Case of China**

**EPRG Working Paper 2009**

**Cambridge Working Paper in Economics 2042**

**Li-Qiu Liu**

**Zhong-Ling Yin**

**Bai-Chen Xie**

**Wei Zhou**

This paper mainly focuses on the impact of air pollution on happiness and the value of better air quality. By matching happiness data with air quality data according to date and location of the happiness survey, it employs OLS to explore the possible factors affecting happiness. The results have thrown light on several important points.

First, the results provide support for the opinion that pollution diminishes people's self-reported happiness directly. Deeply, females, lower income populations, less educated and those living in polluted areas are more susceptible to air pollution. We also explore related factors influencing happiness level. Being in better health condition and participating in medicare have a positive and significant impact on happiness. Holding a positive attitude towards equality, having a higher level of social status help to maintain happiness. While, negative life experience like divorced or separated may decrease happiness.

Second, the findings give demonstration of a substantive trade-off between absolute income and local air pollution. The estimated average WTP is 549.36yuan, or 0.90% of annual household income per year per family for one unit AQI reduction. Different groups significantly differentiated in their WTPs for better air quality. Specifically, those who are more sensitive to pollution show higher WTPs for better air quality. Vulnerable groups like female, people living in more polluted areas show a higher WTP. The more educated individuals and those viewing the society as equal are more willing to pay for better air quality.

As a huge project, controlling air pollution effectively depends not only on the determination of the government but also on the acceptance of the public. The two aspects are difficult to unbundle in the long run. The estimates of WTP bring forth useful information on

the benefits of implementing regulations to reduce air pollution. In addition, the conclusions about individual preferences provide targeted recommendations to raise people's environmental awareness thus promoting the governance of air pollution.

Improving income is an effective way to stimulate WTP. Currently, household income is still a dominant factor of WTP in China. The lowest income group bears most of the negative effects but willing to pay a larger share of income compared with the whole sample, however, limited by absolute income, their WTP is the smallest. Furthermore, WTPs ranges from 140.81yuan to 3236.41yuan of different income groups, indicating that if environmental taxes are to be levied, the tax rate should be progressive.

Promoting social equality and improving medicare system should be attached great importance. The results of equality may reflect concerns of vulnerable groups, so it is necessary to narrow gaps. Pushing social equality will not only help people to achieve higher happiness level, but also enhance people's sense of social responsibility. Among the potential steps, medicare system should be placed in an important position.

Our estimates generally reflect the public's WTPs, but not all the public are aware of the serious air pollution, or not all the public are exposed to the negative effects. Active measures should be taken to enhance residents' consciousness about air pollution. Targeted populations may include males and the less educated, to promote the process of controlling air pollution.

Contact  
Publication  
Financial Support

[xiebaichen@tju.edu.cn](mailto:xiebaichen@tju.edu.cn) [xieb@jbs.cam.ac.uk](mailto:xieb@jbs.cam.ac.uk)

May, 2020

National Natural Science Foundation of China, National Social Science Fund of China and the Philosophy and Social Sciences Program of Tianjin.

**[www.eprg.group.cam.ac.uk](http://www.eprg.group.cam.ac.uk)**