

# **Estimation of the subjective risk belief function: Evidence from cooking fuel choices and health in India**

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## **Abstract**

To understand the nature of an individual's risk perception, we estimate the subjective risk belief function by using field surveys and econometric analyses. We study the risk of physical symptoms related to indoor air pollution caused by cooking by households in India. By using field data collected from 587 respondents in the 17 villages in West Bengal, we first regress the probability of symptoms due to fuel usage to estimate the respondent-specific health risk changes. Then, the subjective probabilistic beliefs are elicited by using an interactive method with visual aids. By comparing the estimated risks with the elicited subjective beliefs, we find that beliefs have considerable variation. By considering the estimated risks as objective risks, we examine the shape of the subjective belief function and show flat or S-shaped beliefs suggesting that overestimation of the small and underestimation of the large probability of symptoms. Our results suggest systematic risk misperception in the field and a source of probability distortions.

*Keywords:* Cooking fuel choice, Indoor air pollution, Risk attitude, Risk misperception, Subjective belief