

The relationship between risky behaviour, information and scope effects and the willingness to pay for carbon capture and storage

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Abstract

A significant relationship between risk perception and the WTP for non-markets goods, has been found in the environmental economic literature. However, whether this relationship is conditional on prior knowledge, new information and the scope of the non-market good under investigation remains unanswered. Using WTP data for 5M and 10M (scope) tons CO₂ Capture and Storage (CCS) from 2200 respondents, we test if three information levels, CCS familiarity and scope impacts the relationship between risk perception and the WTP for CCS. The information sets include a baseline information set, a baseline + international CCS experience information set, and a baseline + international CCS experience + Danish onshore natural gas storage information set.

We found a bell-shaped relationship between risky behaviour and WTP across the 2 CCS project scenarios. We found no significant link between risky behaviour and WTP if the respondents are familiar with CSS in the 5 M scenario. However, if the respondents are unfamiliar with CCS, we find a significant relationship. In the 10 M scenario, we find a significant relationship between risky behaviour and WTP independent of CCS familiarity. Accordingly, the scope of CCS project (5M vs. 10M) influences the relationship between WTP and risky behaviour among respondents with CCS familiarity.

Conditional on the experimental information, we found a significant relationship between WTP and risky behaviour if the respondents receive the baseline information or the international experience information scenario. However, if the respondents receive the international and Danish experience information scenario, the relationship between WTP and risky behaviour is insignificant.