

Collective protection against adverse events: an experimental investigation

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Abstract:

In coming years, due to climate change, the frequency of extraordinary events such as floods, tsunamis, mudslides, lahars, etc. might significantly increase. Given such a context, the existent protection against hazardous events is being challenged: individuals who are exposed to such adverse events need to decide whether or not to improve their level of protection. We investigate, experimentally, how a change in the intensity of an adverse event affects the level of collective protection chosen by individuals. For that purpose, we designed a within-subject experiment in which subjects were initially exposed to a sure adverse event followed by a random adverse event, both affecting negatively subjects' payoffs. We compare three treatments that vary with respect to the specification of the random event: uniform risk, extreme risk, and ambiguity. The results show that for all treatments average group contributions increase significantly under randomness. Surprisingly however, not all subjects increased their contributions. More than a third of them reduced the level of their contribution, especially in the ambiguity treatment. Our results also show that depending on the type of adverse event, efficiency and group asymptotic convergences vary significantly. Efficiency is highest in the uniform risky treatment while the level of asymptotic group convergence is the lowest in the ambiguity treatment.

Keywords: Public goods, risk, ambiguity, hazard, random adverse event.

JEL classification: C90;C91;C92;D81; Q54

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