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Does exposure to lahars risk affect people's risk-preferences and other attitudes? Field data from incentivized experiments and surveys in Arequipa - Peru

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Many individuals are exposed to risks which are either difficult to insure or hard to mitigate, such as tsunamis, floods, volcanic eruption,... Little is known about how exposure to such risks shapes individuals' risk-preferences. Are they more (less) risk-averse than people who are unexposed to such hazard risk?

We provide empirical evidence about this question for the case of individuals exposed to lahars risk. Lahars are sediments laden flows from volcanic origin. We compare the risk-attitude of people exposed - versus non-exposed ones - to lahars risk. The originality of our approach is that we combine standard survey data to behavioural data collected by means of incentivized experiments. We collected data in various locations of the city of Arequipa (Peru), a densely populated area down the volcano El Misti. Participants in our experiment were identified as (non-)exposed to lahars risk based on risk zoning. Our survey questionnaire allows us to compare assessed exposure and the perceived exposure. We elicit risk-preference, time-preference, and trusting behaviour (a measure of social capital) for each respondent in addition to standard survey data.

Our field experiment involved a total of 209 respondents from exposed and non-exposed areas. While respondents endow legitimacy in risk reduction (more than 74%) to a national authority (Defensa Civil) in charge of the management of risk in the city, more than 64% of them consider that they are not sufficiently informed about the behaviours to adopt in case of a disaster. Respondents are therefore poorly motivated to adopt initiatives of self-protection (23%) and express instead high expectations with respect to authorities' actions for decreasing their vulnerability (73%).

The experimental data show that participants who live in exposed areas are not significantly more risk-averse than those living in non-exposed ones. Furthermore, there is no significant difference in time-preference between exposed and non-exposed areas, even after controlling for background volcanic risk (eruption, ...). These findings contrast with respondents' stated risk preferences which show a significant difference of perception between exposed areas and non-exposed ones.