Social Exchanges, Attitudes toward Uncertainty and Technology Adoption by Bangladeshi Farmers: Experimental Evidence

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Abstract

The literature discusses risk aversion as one of the behavioral determinants of technology adoption. However, little attention has been paid to measuring ambiguity aversion of poor people in developing countries or in finding the role of ambiguity aversion in technology adoption. Risk experiments in the previous studies have been designed in such a way that individuals face the risky and/or ambiguous situations alone. Individuals in the real world, especially farmers in developing countries, are likely to get information from peers before making any decision regarding a new innovation that has an ambiguous nature. This paper addresses two broad issues. The first issue is to measure the risk and ambiguity preferences of Bangladeshi rural farmers. The paper investigates whether the attitudes toward uncertainty (risk and ambiguity) differ when farmers face the uncertainty alone versus when they are allowed to communicate with peer groups of 3 or 6. It also investigates whether farmers’ demographic characteristics affect their attitudes toward uncertainty or not. A second issue is to find whether a farmer’s ambiguity aversion is important in explaining technology adoption decisions. Combining measured behavioral variables from the experimental data with a household survey data, the study provides two conclusions. First, Bangladeshi farmers in the sample are mostly risk and ambiguity averse. Their risk and ambiguity aversion, moreover, differ when they face the uncertain prospects alone from when they can communicate with other peer farmers before making decisions. The study also finds that farmer’s demographic characteristics affect both risk and ambiguity aversion. Second, and perhaps more importantly, findings from the study suggest that the roles of risk and ambiguity aversion on technology adoption depend on which measure of uncertainty behavior is incorporated in the adoption model. While risk aversion decreases the likelihood of technology adoption when farmers face uncertainty alone, both risk aversion as well as ambiguity aversion matter and they reduce the likelihood of technology adoption when farmers face uncertainty in groups of three and six.