

The Role of Social Networks in Weather Insurance Take-up by Rice Farmers in China

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Given well recognized low adoption by farmers of weather insurance contracts, the experimental research reported in this Brief explores the role of directly provided financial education versus indirectly acquired understanding through the social networks to which farmers belong. Results show that financial understanding is necessary to adopt and that social networks are an effective way of making the benefits of financial education acquired by some to many others in the village, particularly if those who received direct education are strongly connected to others, village leaders, or influential farmers.

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In this study, we analyze the role of information in weather insurance take-up by Chinese rice producers using data from a randomized experiment where information was either offered directly through financial education or accessed indirectly through social networks. Unlike previous studies, the experimental design allows to not only identify the causal effect of social networks, but also to differentiate the various channels through which they operate, including scale effects, personalized imitation, and social learning of insurance benefits.

To identify the social network effect, we randomly invited a subset of households to attend a village meeting that introduced the insurance contract and the benefits of purchasing it, visited uninvited households individually three days after the village meeting with only brief explanation of the contract, and looked at whether households were more likely to buy the product if they have strongly related friends who attended a village meeting. The results are presented in Table 1. They show that social networks have a large and significant effect on insurance take-up decisions: while attending a village meeting by yourself improves take-up by 12%, having one additional strongly connected friend attend a meeting raises your own take-up by 5.5%, which catches around 50% of the direct meeting effect. Inviting village leaders or influential farmers who are in your social network to attend the meeting creates an even larger spillover effect.

Moreover, we differentiate the following three mechanisms of the social network effect: scale effects in take-up (whereby a larger mass of adopters in the village may be seen by each individual as improving their negotiating power with the insurance company in case they are not satisfied with payouts), personalized imitation of the behavior of specific others in your network (whereby individuals want to act like their friends), and social learning of insurance benefits (diffusion of understanding of the benefits of insurance among farmers through their social

networks). As can be seen from results in Table 2, we find that the main mechanism at play is social learning of insurance benefits. If we provide intensive financial education to different subsets of households within a village in two rounds (where the second round is held three days later than the first round), we find that this financial education improves take-up and farmer's understanding of insurance benefits a lot in the first round, but makes no difference in the second round. Moreover, the levels of take-up and understanding among second round farmers converge to those of first round farmers who have received financial education. This suggests that farmers need to understand for themselves the benefits of insurance in order to decide on the adoption of a costly insurance product, as opposed to merely imitating specific others or counting on the mass of others.

The policy implication of results from this experiment is that offering intensive financial education to a subset of households in a village community selected for their strong friendship links with others, their recognized farming skills, and their leadership roles in the village, and relying on social networks to extend the effects of this education on the other farmers through social learning, can be a cost effective way of improving insurance take-up rather than attempting to provide direct financial education to all farmers in the village .

Table 1. Effect of social network on insurance take-up

VARIABLES	Insurance take-up (1 = Yes, 0 = No)		
	(1)	(2)	(3)
• Fraction of network in village meeting (strong)	0.314**		
• & have been invited to village meeting	(0.153)		
• Fraction of village leaders in social network		0.963***	
• & have been invited to village meeting		(0.243)	
• Fraction of influential farmers in social network			0.476***
• & have been invited to village meeting			(0.153)
• Observations	1,360	1,360	1,360
• Region fixed effects	Yes	Yes	Yes
• R-squared	0.066	0.062	0.060

Notes: Robust clustered standard errors in parentheses.

Estimations are based on the sample of households who were not invited to village meetings.

*** p<0.01, ** p<0.05, * p<0.1

Table 2. Effect of financial education on insurance take-up and financial knowledge

VARIABLES	Insurance take-up (1 = Yes, 0 = No)	Understanding (0-1)
	(1)	(2)
• Intensive (1 = Yes, 0 = No)	0.140***	0.314***
	(0.0259)	(0.0120)
• 2 nd round (1 = Yes, 0 = No)	0.0715**	0.230***
	(0.0308)	(0.0114)
• Intensive* 2 nd round	-0.126***	-0.308***
	(0.0398)	(0.0157)
• No. of Observation	3,433	4,637
• Region fixe deffects	Yes	Yes
• R-squared	0.089	0.180

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1



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