



Picture-Based Crop Monitoring and Social Comparison Improves Perceptions of Fairness and Raises Demand for Insurance: A Field Experiment in Ethiopia

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Context

- In 2011, the R4 Resilience Initiative (R4) was founded by the World Food Programme (WFP) and Oxfam America.
- R4 is a program aimed at enabling vulnerable rural families to increase their food and income security by managing climate-related risks.
 - Active in Ethiopia, Kenya, Malawi, Senegal, Zambia and Zimbabwe.
- One primary aim of the program: provide affordable insurance by estimating losses using rainfall measured through satellite remote sensing.

Problem

- Smallholder farmers in developing countries are exposed to covariate weather-related production risks, and to idiosyncratic natural hazards that are difficult to cover using index insurance.
- Insured farmers who experience crop losses, but do not receive an insurance payout develop mistrust of weather-based index insurance (WBI).
- At the same time, insurance for idiosyncratic risks would introduce differences in payouts within social networks, which might be considered unfair, introduce jealousy, and further depress demand for insurance.



General Overview of Research

- We conducted lab-in-the-field experiments with farmers in Ethiopia to examine the effects of a novel insurance approach: using smartphone images of insured crops to verify losses and ensure insurance payouts for farmers who experience crop loss.
- We introduced such picture-based index insurance (PBI) to a random subset of our study respondents in the context of games framed in terms of real-world types of situations in which potential crop losses would be insured through WBI and/or PBI.
- We cross-randomized whether farmers were informed of seasonal outcomes only for themselves and then separately for their neighbors; or as a comparison between their own and neighbors' outcomes (social comparison).

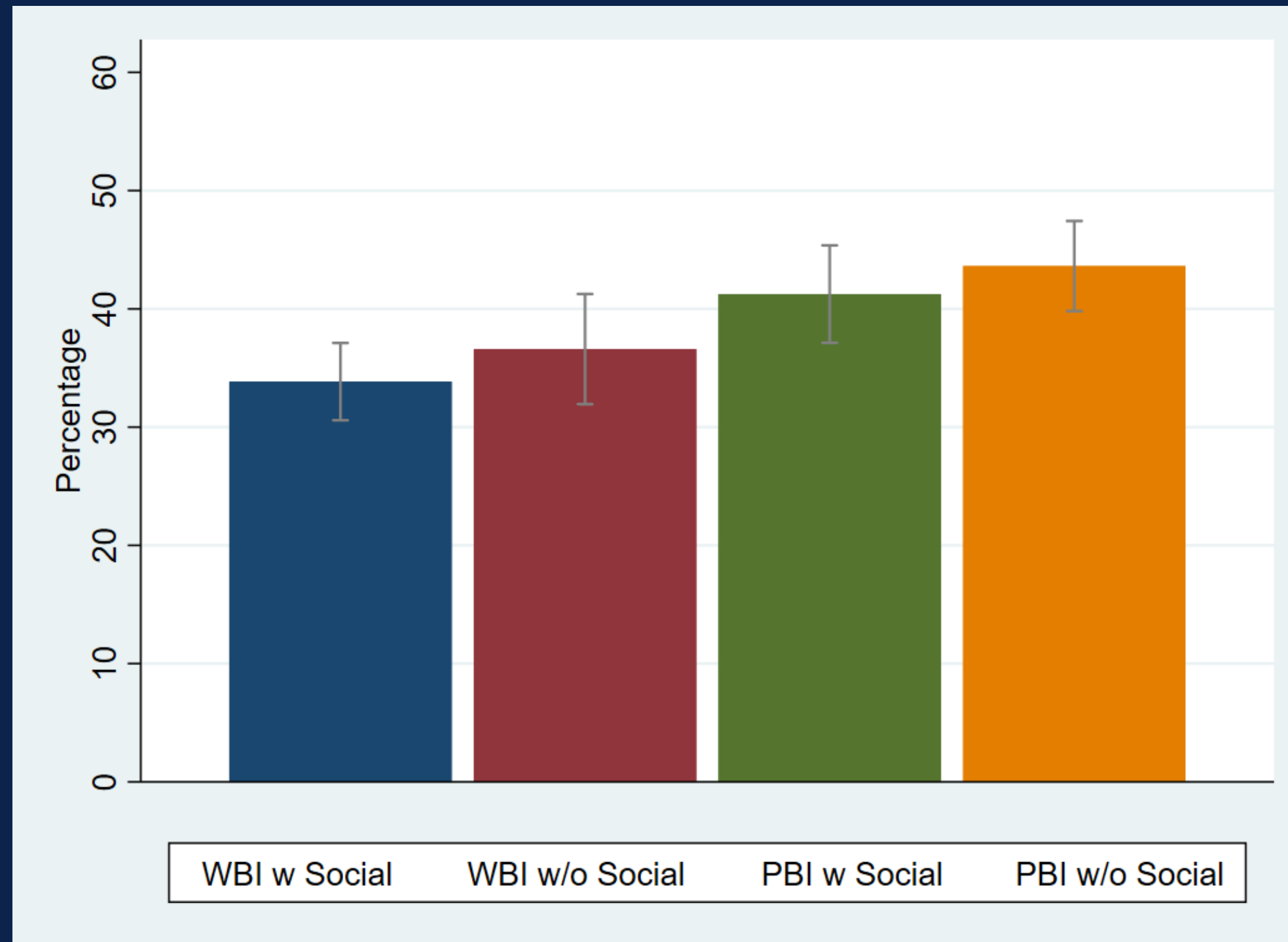


Number of Respondents by Treatment

	No Social Comparison	With Social Comparison	Total
WBI	115	117	232
PBI	127	121	248
Total	242	238	480

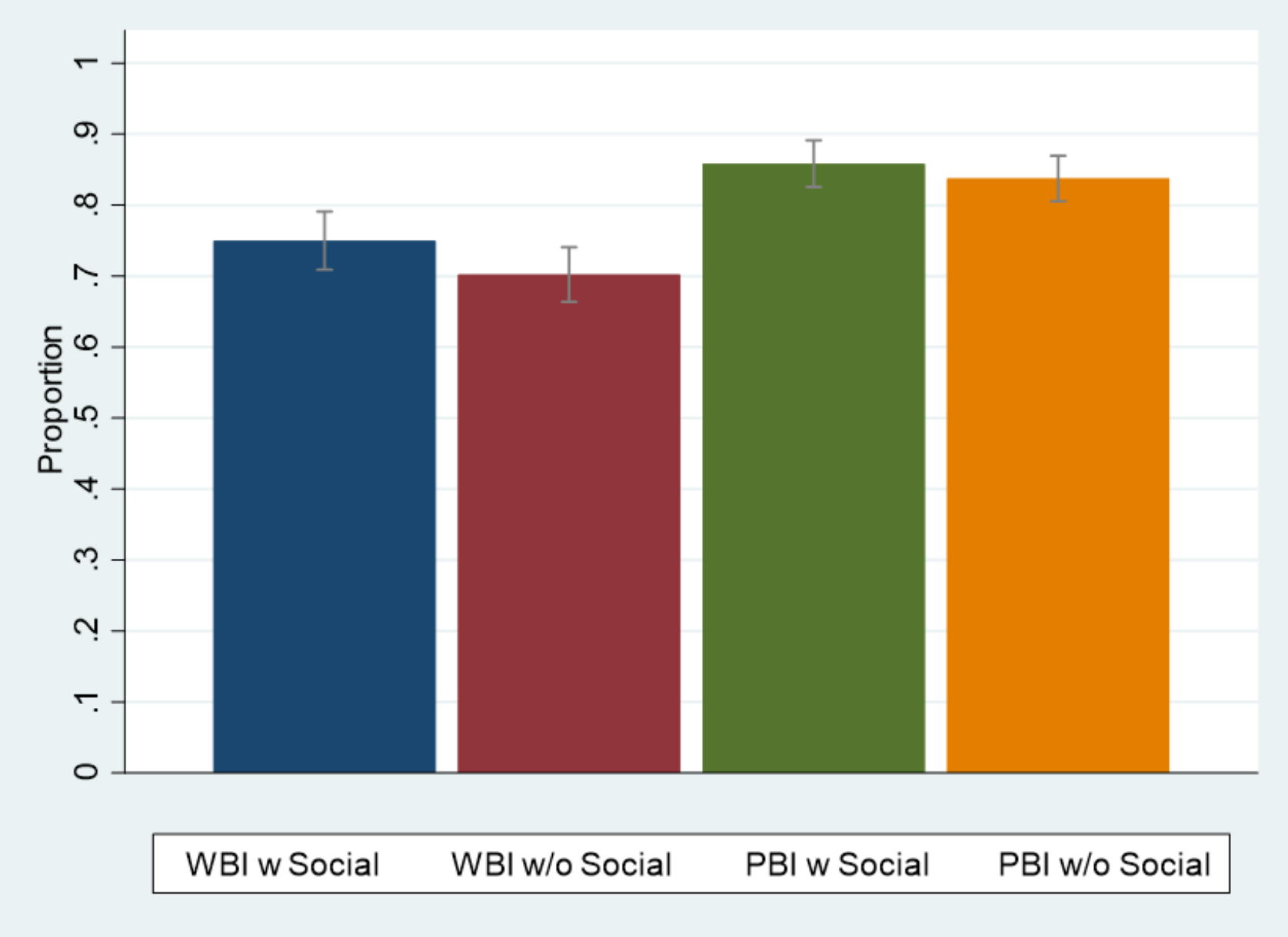
Results

Maximum Willingness to Pay as Percentage of Sum Insured

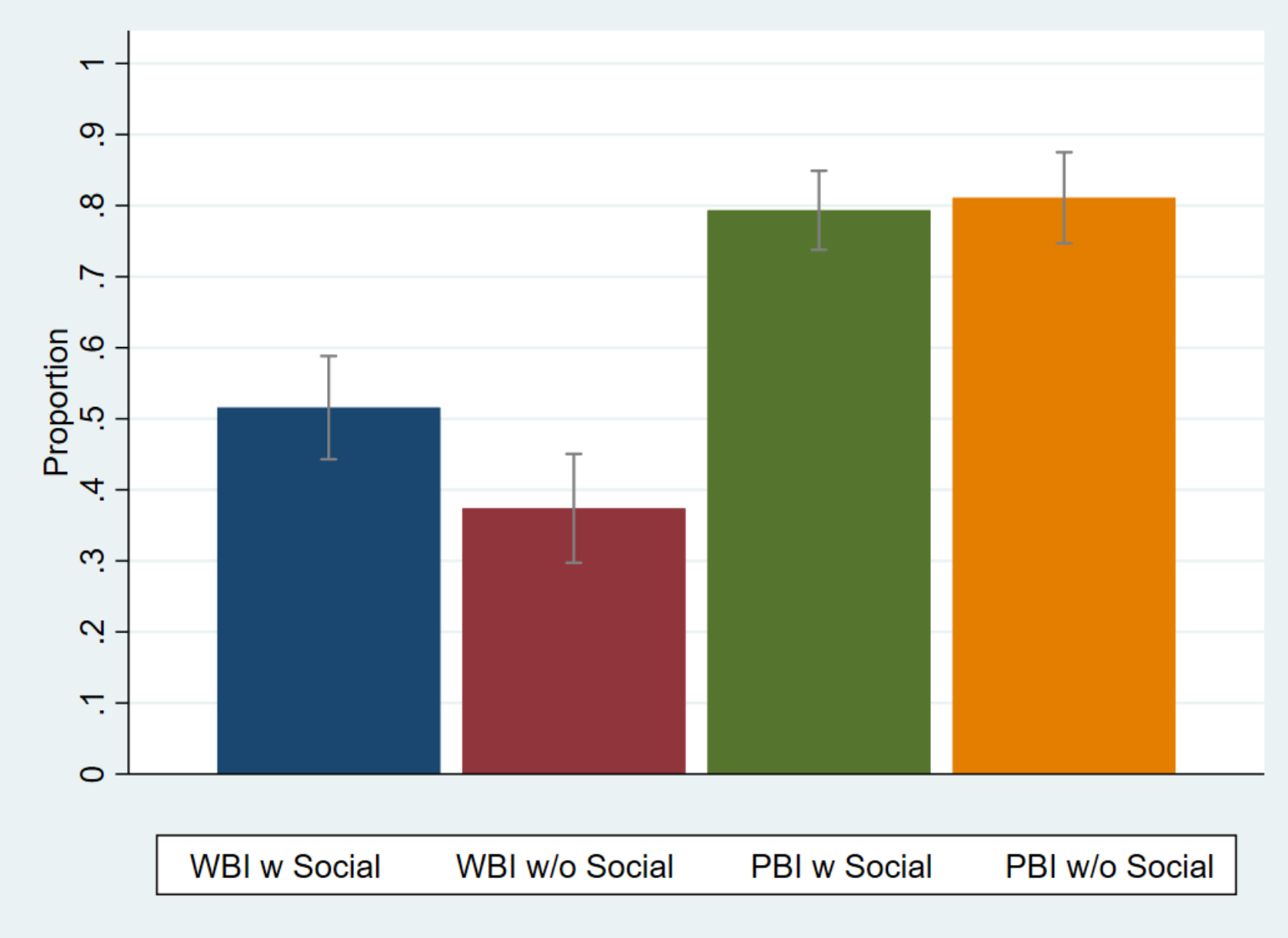


Providing insurance for idiosyncratic risks increases farmers' willingness to pay, without introducing jealousy over neighbors receiving payouts for idiosyncratic events.

Proportion of respondents who consider hypothetical insurance scenarios to be fair outcomes



Proportion of respondents who consider hypothetical insurance scenarios *with basis risk* to be fair outcomes



Perceived fairness higher for PBI than WBI, with social comparison not reducing perceived fairness under PBI.



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