



The social dilemma of microinsurance: Free-riding in a framed field experiment



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ABSTRACT

Health shocks are among the most important unprotected risks for microfinance clients, but take-up of micro health insurance remains low. A framed field experiment with credit groups in Tanzania, eliciting demand for group versus individual insurance, attributes this to a social dilemma. In a context of joint liability, insurance is a public good because clients can rely on contributions from group members to cope with health shocks. We hypothesize that clients have a private incentive to free-ride and forgo individual insurance even when full enrollment optimizes group welfare. The binding nature of group insurance eliminates such free-riding. Our experiment yields substantial support for this hypothesis. Whereas the demand for group insurance is high, a substantial share of clients forgoes individual insurance and relies on peers to repay their loan when falling ill. Group insurance can potentially increase low take-up rates.

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1. Introduction

Households in developing countries face tremendous health risk but lack access to formal health insurance (Gertler and Gruber, 2002). High transactions costs, information asymmetries and a lack of trust prevent private insurance providers from covering the poor. Moreover, high degrees of labor informality and weak institutions hamper solutions adopted in developed countries, such as tax-financed public health care, social health insurance, mandatory enrollment, or employer-provided group insurance (Zweifel et al., 2009). Many developing countries therefore resort to introducing voluntary health insurance, often via microfinance institutions (MFIs). Despite premiums typically being highly subsidized and below actuarially fair levels, take-up of micro health insurance remains low (Acharya et al., 2012).

This paper argues that low demand for health insurance is partly due to a social dilemma. Without insurance, the poor rely on contributions from their social network to finance catastrophic health expenditures. MFIs institutionalize such risk sharing by lending to jointly liable groups in which access to future loans is conditioned on full group repayment. This creates incentives to help fellow group members repay their loan in the face of illness or other financial disaster (Aghion

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et al., 2000).¹ Contributions however provide incomplete insurance since the group may not share risk beyond repayment of the loan. Insurance that covers the full risk can hence be welfare-enhancing. At the same time, precisely because part of the health risk is shared within the credit group, members may free-ride on others and decide not to enroll in formal insurance.

Using a framed field experiment with 355 clients from an MFI in Dar es Salaam, Tanzania, we test whether demand for health insurance is indeed subject to a social dilemma. Participants played a public goods game framed as health insurance decisions in jointly liable credit groups. Depending on treatment, they were offered insurance at either the individual or group level. Group insurance requires a unanimous decision to enroll and commits group members to jointly take insurance if full group enrollment optimizes group welfare.² Individual insurance allows clients to opt in or out of insurance independent of their group members. Non-cooperative game theory predicts that only sufficiently risk averse clients cooperate on the social optimum by enrolling in individual insurance. Less risk averse clients are tempted to forgo individual insurance, even if full group enrollment optimizes group welfare, because they can rely on peers' assistance when falling ill.

Empirically, free-riding is not a trivial outcome in a microcredit context. On the one hand, experimental studies on project choice in microfinance groups find that individuals make riskier investment choices under joint liability – when they can free-ride on peers – compared to individual liability, even when this harms group welfare (e.g. [Giné et al., 2010](#)). On the other hand, microfinance groups are long-term relationships with repeated interactions. The threat of future retaliation, social ties and interactions within credit groups may well induce cooperative behavior ([Bó, 2005](#); [Abbink et al., 2006](#); [Cassar et al., 2007](#)). In other words, joint liability can encourage borrowers to take excessive risks and free-ride on peers, or lead to cooperation and safer choices, including the choice to take health insurance.

Our findings provide substantial evidence of free-riding. Under group insurance, nearly all participants opt for insurance, indicating that insurance optimizes group welfare. Under individual insurance, demand is high only among more risk averse clients. A large number of less risk averse clients forgoes individual insurance and free-rides on contributions from their peers. We conclude that mechanisms through which joint liability may lead to safer choices in microfinance groups do not rule out free-riding in health insurance decisions. Group insurance aligns individual and group incentives and can thereby help microfinance groups coordinate on their social optimum.

This study contributes to the existing literature in three distinctive ways. First, we extend the literature on joint liability and strategic investment behavior (e.g. [Stiglitz, 1990](#); [Giné et al., 2010](#); [Fischer, 2013](#)). Unlike prior experiments, we do not analyze project choice under individual versus joint liability. Instead, we take the joint liability context as given, and identify free-riding by comparing choices with and without binding group agreement. Further, our task is framed as a health insurance choice, which may invoke a different set of norms than business investments.

Second, we add to an emerging literature on how informal risk-sharing can hamper demand for formal insurance. Independently, [De Janvry et al. \(2014\)](#) and [Mobarak and Rosenzweig \(2015\)](#) also refer to free-riding problems to explain low insurance take-up. Using game theory, [De Janvry et al.](#) show that low demand for rainfall insurance in cooperatives is potentially due to free-riding and coordination failures among members. [Mobarak and Rosenzweig](#) use observational data to investigate whether informal risk-sharing in caste groups reduces demand for formal weather insurance. In the controlled environment of the lab, we can identify free-riding separately from coordination failures. Moreover, we focus on insurance against idiosyncratic health shocks instead of co-variate weather shocks.

Third, the study provides insights on linking microfinance with health-related services. Such linkages hold real promise, but to date, few studies assess the potential of bundling credit and insurance to improve health seeking behavior ([Leatherman et al., 2012](#)). Exceptions are [Ahmed et al. \(2006\)](#), who show that free health services, including health financing, improve health-seeking behavior in a microcredit context; [Blanchard-Horan \(2007\)](#), who find smaller delays in seeking treatment for malaria among insured microcredit clients than among uninsured clients; and [Banerjee et al. \(2014\)](#), who provide evidence of clients dropping out from the MFI when loans are bundled with mandatory health insurance.

Our study thereby highlights a crucial advantage of voluntary group insurance contracts in a microfinance setting. Group insurance does not only limit adverse selection, as has been widely investigated for employer-based insurance ([Browne, 1992](#); [McGuire, 2012](#)), but also increases take-up by eliminating free-riding on others' contributions. Further, the voluntary nature of group insurance reduces the risk of clients dropping out when bundling credit and insurance. This is relevant for numerous microinsurance programs struggling to increase enrollment and limit adverse selection.

The remainder of this paper is structured as follows. The next section introduces the experiment. Section 3 discusses our main hypotheses and classifies less versus more risk averse participants. Section 4 tests for free-riding in insurance decisions. The final section concludes.

¹ Joint liability also serves to reduce adverse selection and moral hazard, and enforce repayments ([Ghatak and Guinnane, 1999](#)). Although major microfinance institutes have moved to individual liability ([Baland et al., 2013](#)), joint liability still features 26 and 20 percent of total loans in Africa and the rest of the developing world, respectively ([Beck and Cull, 2013](#)). Further, individually liable clients can operate as a group and support delinquent group members ([Feigenberg et al., 2013](#)).

² This paper defines group insurance by the restriction that all members need to enroll in order to be offered a formal insurance contract. By contrast, the literature on informal risk-sharing sometimes refers to group insurance as risk-pooling within groups (see e.g. [Paal and Wiseman, 2011](#)), i.e. joint liability in our case.

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