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Can peers increase the voluntary contributions in community driven projects? Evidence from a field experiment☆

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ABSTRACT

This paper explores whether peer effects increased voluntary contributions in a community electrification project in Kenya. The project organized 30 community mobilization meetings to encourage financial contributions. Ten "low" meetings included only low contributors, ten "high" meetings included only high contributors, while ten "mixed" meetings were composed of both high and low contributors. We then followed contributions over one year. Low contributors increased their contribution after mixed versus low meetings. Effects were asymmetric: high contributors did not contribute less following mixed versus high meetings. Organizing mixed meetings was thus a "win-win" for the project. Detailed qualitative observations of meeting attendees suggest that much of the exposure in mixed meetings to peer encouragement, project criticisms, and neutral learning about the project came from high contributors.

1. Introduction

Many communities in low-income countries struggle to finance much needed local development projects. Few low-income countries are able to mobilize sufficient tax revenue, and traditional foreign aid, even if it were efficient and well-targeted, is unable to bridge the financing gap (Besley and Burgess, 2003; Burgess and Stern, 1993). In response, communities have increasingly turned to voluntary contributions by their own members. For example, Olken and Singhal (2011) find that voluntary contributions already represent a significant share of local development budgets. Community participation is also actively promoted by the international community. The World Bank alone has allocated close to USD 80 billion towards participatory development projects over the last decade (Mansuri and Rao, 2012). However, mobilizing sufficient local financial contributions is difficult to achieve in practice. For example, Gulyani and Conners (2002) estimate that, at best, local infrastructure projects typically recover only 5–10% of total project costs through community financial contributions.

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Against this background, this paper investigates whether smart design of a community mobilization campaign can generate peer effects that lead low contributors to increase their financial contributions in community based projects. In particular, when randomly mixed with high contributing community members, do low contributors increase their contributions? And, if so, through which mechanisms? And, is the effect symmetric: do high contributing community members lower their contributions when randomly mixed with low contributors, or can there be a win–win situation? These dynamics are investigated through a mobilization intervention in the context of a community based rural electrification project in Kenya that struggled to generate sufficient financial contributions from its members.

Findings from laboratory experiments suggest that peer effects can impact voluntary contributions. For example, having low contributors interact with high contributors may motivate contributions and induce participation (Gunnthorsdottir et al., 2007; Ockenfels and Weimann, 1999; Ones and Putterman, 2007; Burlando and Guala, 2005). Several peer effect mechanisms have been explored in laboratory settings, including the role of conditional cooperation where people contribute only if others do (Fischbacher et al., 2001), and also peer pressure in the form of punishment (Gächter and Thöni, 2005), shame (Masclet et al., 2003; Carpenter et al., 2004; Barr, 2001), or encouragement of low contributors (Chaudhuri et al., 2006). Peer effects in complex real world projects may differ from the laboratory setting. For example, they may be higher if low contributors can learn from high contributors about the project progress or about the project benefits once completed (see Bandiera and Rasul, 2006; Conley and Udry, 2010 for evidence of social learning). On the other hand, high contributors could have no effect on low contributors if the project is "bad", or if implemented in a "bad" community (Khwaja, 2009).

This paper contributes to this literature by exploring whether peer effects among project members can be harnessed to boost contributions in a large real world community based project. The context of the experiment is a community based rural electrification project in Central Kenya. Starting in 2004, Green Power (GP), a very small Kenyan NGO, began collaborating with a rural community on the slopes of Mt. Kenya to establish an off-grid micro hydro power system to supply electricity to participating project members. The system is financed, constructed, and co-owned by these same members. While the community achieved considerable success in completing the local dam and power house, it struggled to raise enough money to finance the needed turbines and power distribution. Concerned that the success of the project was threatened, GP approached the authors to design and evaluate an intervention aimed at increasing contributions. This provided for a unique opportunity to test the impact of peer effects on voluntary contributions in a real world community project that experienced financial difficulties common to many other community projects around the world.

The subsequent intervention was implemented in 2008 and 2009 and consisted of organizing 30 one-day community mobilization meetings. Each of the nearly 1500 project members received a personal invitation to one (and only one) of these 30 meetings. Altogether, 413 project members responded to the invitation by attending the assigned meeting. One project member attended a meeting he was not invited to. Other members did not attend. We used the historical records of financial contributions to the project by each member prior to the start of the meetings to identify high contributors (above the median contribution) and low contributors (below the median contribution).

Unbeknown to the organizers of the mobilization meetings and unbeknown to the members themselves, we had randomly assigned each member to one of two meeting options: a meeting in which all members were of the same ex ante contributor type (i.e. a low only meeting or a high only meeting), or a meeting in which low and high contributors were mixed (a mixed meeting), thus effectively creating three groups: low, mixed, high. This hidden random assignment guaranteed that members who decided to attend the meeting did not self-select based on the type of the meeting. To confirm this, we show that the observable characteristics of low (high) contributing attendees to low (high) or mixed meetings are not statistically different.

To measure peer effects, we compare subsequent project contributions of low contributors who attended (and were randomly assigned to) the low meetings with low contributors who attended (and were randomly assigned to) the mixed meetings. And, conversely, we measure peer effects on the high contributor group by comparing the subsequent contributions of high contributors in high versus mixed meetings. To explore the mechanisms underlying this effect, we collected detailed qualitative data on the behavior of meeting attendees, including recording and coding all the questions and comments raised by the meeting participants.

While the random assignment of meeting types conditional on the decision to attend ensures internal validity of our identification strategy of peer effects, a potential criticism is that we cannot claim that these peer effects extend to the non-attending members. However, our main interest is to understand peer effects in a real world setting, namely community mobilization meetings to which individuals voluntarily participate without any incentives to attend provided by the research team.

The main result of this paper is that low contributors contributed significantly (and substantially) more following mixed than following low meetings. Effects were asymmetric: high contributors did not contribute less in mixed versus high meetings. Organizing mixed meetings was thus a "win–win" for the project. Concerning the mechanism, we find no evidence of shaming in the meetings. Instead, we see that most of the positive encouragements, criticisms, and neutral comments and questions in mixed meetings came from high contributors. To the extent that messages from high contributors raised contributions of low contributors, these findings may help explain the main result of the paper.

Overall, this paper contributes to the literature on peer effects in voluntary contributions using a rigorous field experiment within a community project, including unique detailed qualitative participant observations. It finds strong support that peer effects among project members exist in voluntary contributions. The practical implications of this paper likely go beyond community based projects, and may be applicable to other contexts where contributions need to be raised, such as peer