**10th Midwest International Economic Development Conference Session Proposal**

Session: Social networks and Information Diffusion

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Paper 1: Diffusion of Agricultural Technologies within Social Networks: Evidence from Composting in Mali

Lori Beaman and Andrew Dillon

The low levels of adoption of simple agricultural technologies among African farmers is one of the largest puzzles in development economics. In this paper, we investigate whether a lack of credible information on how to use the technologies, and the value of the technologies, is a barrier to adoption. In other contexts, social networks are an important mechanism for diffusing information when formal institutions are missing. In this paper, the authors investigate the effectiveness of social networks in diffusing agricultural information using a field experiment in Mali. The experiment introduced new information about organic composting and varied who within each study village served as the initial recipients. Our experimental approach is based on a census of households’ social network in 52 villages. Using information on the structure of social networks within villages, we provided seed farmers with a brief training and promotional materials about organic composting to distribute in their villages. Villages were randomly allocated to one of three treatments: seed farmers were chosen randomly, or farmers with either the highest degree (the number of links) or highest betweenness (a measure of how important the link is in the network) in the villages’ social networks were chosen. The study looks at how the social network position of the recipient affects the diffusion of information about composting, and provides evidence that some disadvantaged groups can be made worse off when the most connected individuals receive the information first.
Paper 2: Nutrition Information, Networks and Childhood Anemia
Andrew Dillon

Anemia is nearly universal among young children in Burkina Faso and is likely caused by multiple factors including suboptimal infant and young child feeding (IYCF) and care practices, illness, and limited access to high quality food and health care. We conducted a cluster randomized control trial, of children aged 3-12 months at baseline living across four districts in Gourma province, Burkina Faso. Villages were randomly assigned to either the control group or to one of two treatment groups. Both treatment groups participated in a two-year program that included homestead food production, aimed to increase production of high quality foods, and a behavior change communication (BCC) component, aimed to improve knowledge and adoption of optimal IYCF and care practices. The two treatment groups differed in the actors who delivered the BCC messages, either older women leaders (OWL villages) or village health committee members (HC villages). After two years of program implementation, children living in HC villages had a greater increase in mean hemoglobin concentration by 0.46 g/dL (95% CI - 0.07 – 1.0, p=0.089), compared to those living in control villages. This difference was greater among children who were 3-5.9 months of age at baseline living in HC villages relative to those living in control villages (difference = 0.73 g/dL (95% CI 0.12 – 1.33, p=0.02)). We also find significant increases in women’s agricultural production and knowledge of IYCF and care practices. This paper investigates the role that social networks play in diffusing nutrition information among young mothers and the program’s impact on anemia by using exogenous variation in network structure from program-initiated nutrition group formation. We find significant differences in social network induced changes between the two treatment groups and propose to estimate the effect of social network characteristics on knowledge diffusion and the effect of networks on children’s anemia status.

Paper 3: Leveling with Friends: Social Networks and Indian Farmers’ Demand for Agricultural Custom Hire Services
Nicholas Magnan, David J. Spielman, Travis J. Lybbert, Kajal Gulati

Technology-driven gains in productivity and profitability can dramatically improve the quality of life for the rural poor in developing countries. Extension services responsible for the dissemination of agricultural technologies typically rely on the assumption that farmers learn from early adopters in their social networks. In this paper we investigate network effects on farmers’ demand for a resource conserving technology—laser land leveling—in eastern Uttar Pradesh, India. Research on network effects is made notoriously difficult by the reflection problem: it is not usually possible to determine if farmers adopt technologies because others in
their networks use them, or because they share characteristics with adopters in their networks and thus make similar decisions. To circumvent this problem we randomly select farmers from a pool of would-be adopters, as determined by an experimental auction, to actually adopt the technology. We employ a second auction one year later to again elicit willingness to pay from all sample farmers. We find that farmers’ exposure to laser land leveling is positively affected by having a first generation adopter in their social network, and that farmers with an adopting farmer in their network are willing to pay nearly 25 percent more for the technology than are comparable farmers without an adopting farmer in their network. Using data on farmers’ input use in the year between the two auctions, we also find farmers’ willingness to pay to be positively affected by the degree of input use savings adopters in their networks experience, indicating that network effects on demand are due to actual learning and not just mimicry.

Paper 4: Seeing is Believing? Evidence from a Demonstration Plot Experiment in Mozambique
Florence Kondylis and Valerie Mueller

We preliminarily find that providing sustainable land management (SLM) training to standard contact farmers and having them maintain demonstration plots within the community on a whole had low impact on the knowledge and adoption of SLM practices. However, the aspect of our intervention that targeted a traditionally disadvantaged group as far as their access to extension services, women, was somewhat successful in terms of improving their SLM knowledge and adoption rates. Having a female contact farmer increased the number of SLM techniques adopted by women by 10 percent. Both male and female farmers in this treatment group identified female (not male) contact farmers as a source of learning for both SLM practices and non SLM-practices suggesting knowledge spillovers. Furthermore, farmers were additionally inclined to teach others what they have learned in the communities with female contact farmers. While we are currently analyzing additional factors that may affect the ability of the intervention to influence behavior, our results have broader implications for improving extension services