

Learning about barriers to information diffusion in Rural Kenya
Final Report

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The vast majority of the world's poor live in rural areas and mostly rely on agriculture for their livelihood (World Bank, 2022). However, agricultural output is still chronically low throughout much of the world, especially in Sub-Saharan Africa. One potential explanation for this low productivity is the relatively low adoption of modern agricultural technologies, such as improved seeds or chemical fertilizers (World Bank, 2007). The widespread diffusion of information about these technologies could give farmers actionable information to adopt them. Yet, access to formal sources of agricultural extension is relatively rare in most low-income countries. Instead, most smallholder farmers must rely on the knowledge and experience of others to learn about optimal agricultural practices.

Existing research suggests that peer-to-peer information transmission is highly imperfect. For example, people avoid asking questions to avoid appearing uninformed or ignorant (Chandrasekhar et al. 2019). In Malawi, researchers found that farmers had to be incentivized to put the effort in sharing information with others (BenYishay and Mobarak, 2019). Hence, understanding what constraints information diffusion and how to overcome could help policymakers develop better policies to leverage social learning.

Our research project, generously funded by IC2, studied potential barriers in agricultural information seeking or sharing among smallholder maize farmers in rural Kenya. For purposes of this research project, we focused on two types of information: external information about soil chemistry in the area, and information collected from farmers who are considered knowledgeable about farming practices.

First, to understand whether farmers value this type of agricultural information (and hence would want to obtain it), we ran baseline surveys in which we elicited their valuations for these different types of information. This exercise sheds light on the demand (valuation) for agricultural information and farmers' perception of its "usefulness" in monetary terms. Figure 1 shows a broad summary of the results of this exercise.

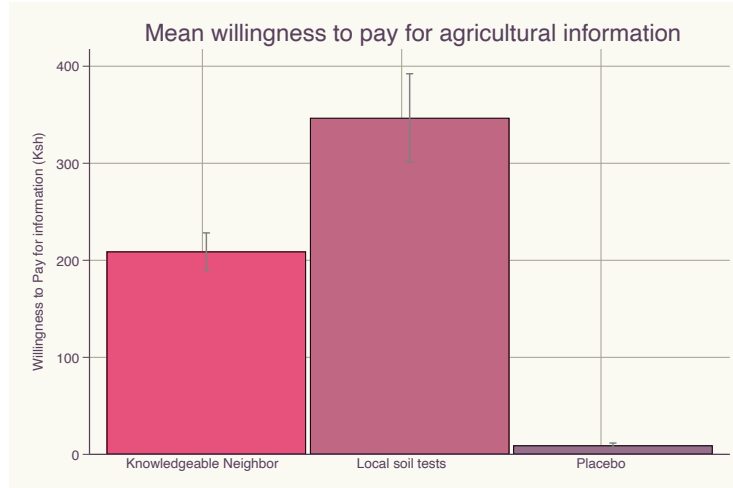


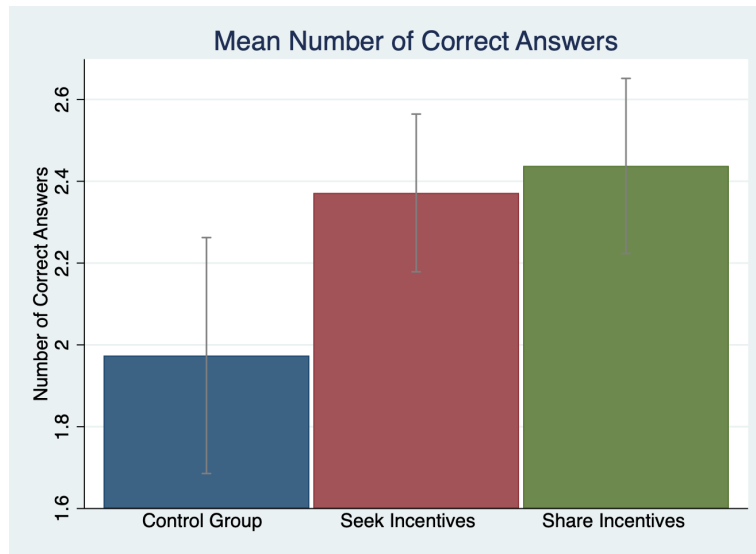
Figure 1. Willingness to pay for different types of agricultural information

The average willingness to pay for the results of local soil tests was 346 Kenyan shillings (~US\$3). This is a relatively high amount considering that many farmers in this area live with under US\$2. Interestingly, farmers also had a positive willingness to pay (approximately 210 shillings) to learn more about the agricultural practices of a knowledgeable farmer in their village. Given that farmers could talk to these knowledgeable farmers about their farming practices instead of paying for this information, why don't they do so? What are the factors keeping farmers from getting the information? Is it due to farmers who are unwilling to seek this information or knowledgeable farmers who are not willing to share it? Can small incentives alleviate these barriers?

To better understand those questions, we formed 450 farmer pairs of regular and knowledgeable farmers. In one third of pairs, we asked both parties to share information with each other. In a second third of pairs, we incentivized the knowledgeable farmer to share information with a small monetary gift. In the last set of pairs, we incentivized regular farmers to seek information with a small monetary gift. To assess whether regular farmers learned from the information we called them over the phone at the end of the project to ask about agricultural practices and compared this information with the information from knowledgeable farmers.

Our results show that incentivized groups were significantly more likely exchange information than those who did not receive any incentives. Interestingly, both sharing and seeking incentives have similar impacts on information exchange. Overall, a small incentive significantly improves the diffusion of valuable information, which could increase agriculture productivity beyond the value of the incentive we provided.

Figure 2. Number of correct answers across groups



While COVID-19 affected some of the originally proposed activities and much of the research activities had to be delayed until it was safe to conduct field work in person, we are currently preparing a manuscript for publication with the findings of this work. Moreover, we obtained a second grant from the National Bureau of Economic Research to continue working on the question of how to encourage social learning among smallholder farmers in low-income settings. We are using the insights from this project to investigate how to spur information exchange in a way that could be scaled up.

References

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