

Problem Set 1 Response

Campbell Clarkson

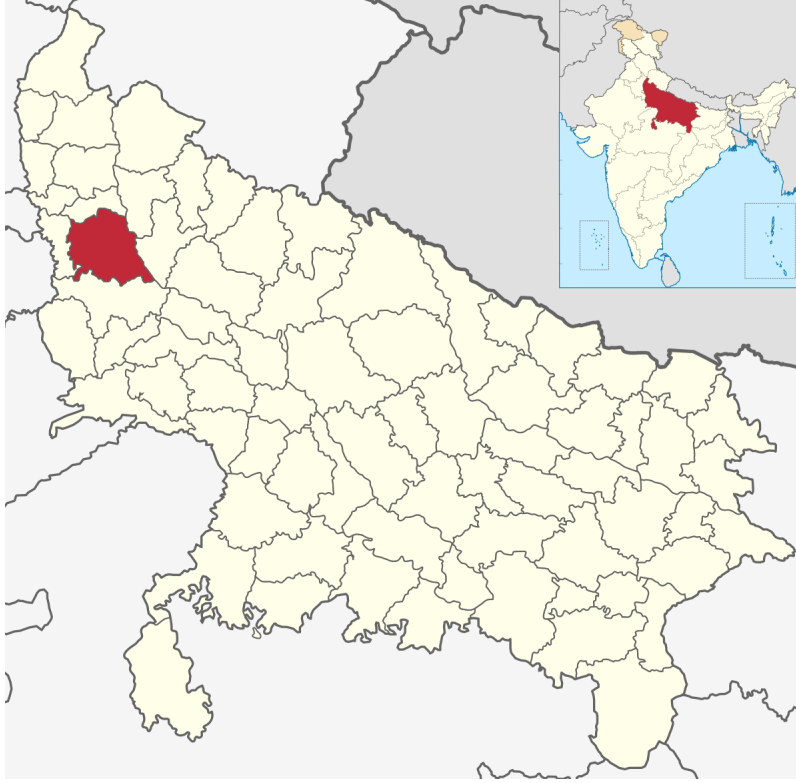
1. About my research

I am primarily interested in Information and Communications Technologies (ICTs) and studying their impacts. To summarize my primary research project for my first year paper submission, I am looking at how ICTs impact farmers' yields in India through a process called agriculture extension.

Agriculture extension traces its roots as far back as 19th century Dublin at the worst part of the potato famine crisis. Swanson et al. (1997) provide an excellent, detailed history of the subject. At its core, it involves providing education and "extending" information to rural farmers to improve practices and welfare. The field continued on until the 1980s, when Training and Visit (T&V) systems became popular in the developing world. The T&V system was noticeably improving farmers' welfare and production practices (Feder et al. 1987), but was also costly, so many of these emerging economies lost touch with large scale T&V systems.

Where I am studying right now is ICT-based agricultural extension, which involves the use of communications technologies to improve agriculture. There have been many studies conducted to this end thus far, but most of them focus on the impact of ICTs on crop prices in the marketplace (Jensen 2007, Parker et al. 2016, Aker & Mbiti 2010). There is consistent evidence that price dispersion is improved and welfare is increased as a result of ICT interventions, but there is a gap in the literature studying ICT-based extension in production of crops.

This is where I am positioning my current study. I am studying the introduction of mKrishi, a mobile phone service in India which allowed farmers to receive text messages with weather and market information, but also enabled farmers to send messages and voicemails asking questions to the service, which would then be answered by an agricultural expert. The service was piloted in 2008, operated through 2011, and then ended service in the pilot district in the Indian state of Uttar Pradesh (identified in the map below).



To do this, I use a difference-in-differences specification, summarized as:

$$\ln(Yield_{dt}) = M_{dt} + Post_t + \beta M_{dt} \times Post_t + C_{dt}\gamma + Y \times D_{dt} + \epsilon_{dt}, \quad (1)$$

where the outcome variable is the natural log of *Yield* and the parameter of interest is β . We find a positive effect that is statistically significant ($\beta = 0.176, p < .001$). This result from equation 1 indicates that the introduction of the ICT improved farmers yields.

2. Other Interests

I am also interested in various questions relating to pricing and revenue management and supply chain management. Some questions I have had include whether pricing promotions on software marketplaces may actually benefit competitors' stores because of increased user traffic.

A supply chain question I am working on developing a motivation for is whether including customer service documentation can decrease RMA (returns/warranty) logistics costs. The story starts with a computer component manufacturer that has lackadaisical customer service, where they offer expedited shipping both ways to the customer, rather than troubleshoot through a list of problems. I would like to

study whether providing a documented list of troubleshooting steps to go through results in more tickets resolved and fewer shipping charges.

References

- Aker, J. C. & Mbiti, I. M. (2010), ‘Mobile Phones and Economic Development in Africa’, *Journal of Economic Perspectives* **24**(3), 207–32.
- Feder, G., Slade, R. H. & Lau, L. J. (1987), ‘Does agricultural extension pay? the training and visit system in northwest india’, *American Journal of Agricultural Economics* **69**(3), 677–686.
- Jensen, R. (2007), ‘The Digital Provide: Information (Technology), Market Performance, and Welfare in the South Indian Fisheries Sector’, *The Quarterly Journal of Economics* **122**(3), 879–924.
- Parker, C., Ramdas, K. & Savva, N. (2016), ‘Is IT Enough? Evidence from a Natural Experiment in India’s Agriculture Markets’, *Management Science* **62**(9), 2481–2503.
- Swanson, B. E., Bentz, R. P. & Sofranko, A. J. (1997), *Improving agricultural extension: a reference manual*, Food and Agriculture Organization of the United Nations.