Gender and Agricultural Technology Adoption

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May 2011
Women and agriculture

- Women are responsible for more than 55% of world’s food production (FAO, 1995), but own less than 2% of all land (The Lancet, 2009)

- Women have differential access to control of resources, possibly impeding efficient use of inputs (Udry (1996) and technology adoption (Goldstein & Udry (2008))

- Agricultural decisions are not undertaken by a unitary household (Duflo & Udry (2004))
Household Decision Making, Female Empowerment and Technology Adoption

- Critical to understand interaction between information and technology adoption within the household
- Puzzling decisions can arise:
  - when couples have asymmetric access to information
  - When information or new technology shifts bargaining power within the couple
- Evidence from agriculture, microfinance, contraceptive adoption

- Modern Contraception:
  - great technological advancement
  - adoption rates lag in developing world

- Open question: What is driving the rates of unmet need and “excess fertility”?

- Adoption requires both access and feasibility
  - Both male & female preferences matter
  - Inefficiencies can arise from asymmetric information or strategic hiding behavior (Ashraf, Spousal Control and Intra-household Decision Making, 2009)
Field experiment design

- Extensive baseline survey on ~1000 women and their husbands from large public health clinic in Lusaka, Zambia
- All women given voucher that lowered costs of access to family planning and new contraceptive technologies
- Randomized whether woman given voucher in presence of husband (“Couples” treatment) or alone (“Individuals” treatment)
Voucher

Free, Instant Access to Depo Provera or Jadelle

If you bring this voucher with your NRC card to Nurse Grace Daka at Chipata Clinic between xx and xx hours Monday through Saturday, we guarantee that you will receive:

- very quick, first-class personalized family planning services from Grace Daka, your own dedicated family planning nurse only for the lucky women in this study
- one implant of Jadelle or one year's worth of Depo Provera if the nurse deems it medically appropriate
- a wait time of no more than 30 minutes; we will give you a free gift if you wait longer than 30 minutes
- a free, surprise gift for you, the woman of the house, if you are one of the first 50 women to see Grace Daka with this voucher

Name .................................................................
NRC# .................................................................
Date .................................................................

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Results

- Women who received the voucher alone were 23% more likely to visit a family planning nurse and 38% more likely to take up a concealable form of contraception, leading to a 57% reduction in unwanted births.

- Treatment effects concentrated among subjects where husbands wanted more children than wives.

- Implications:
  - Technologies that shift control of fertility from men to women likely to reduce fertility and unwanted births.
  - Only when women have greater autonomy to adopt contraception does it lead to a decrease in unwanted births.

- Current work looks at longer-term implications, including innovative methods for aligning husband and wife’s preferences.
Microfinance: Demand for Commitment & Female Empowerment (Ashraf, Karlan, & Yin, 2006 and 2010)

- Commitment-oriented savings products can be particularly helpful for people who have demands on immediate cash from “self”, spouse, family or community (Ashraf et al (2006), Anderson & Baland (2002)
  - Implications for technologies that have longer versus shorter payoffs

- Study provided a savings product where the funds in the account were “committed” to a predetermined goal.

- A woman who opened this account:
  - Had exclusive property rights over the account
  - Decided on the goal herself
  - Was the only one who could take out the money when the goal was reached

- The product caused a significant increase in household decision making power for married women
  - both in the women’s own reporting of how household decisions were made and
  - in the household’s purchases of durable goods typically used by women.
Open Questions

- How can a deeper understanding of intra-household decision-making be applied in agriculture?
- In face of differential constraints, how to make agriculture work for women?
- If women are targeted for adoption (via training or additional resources), how to ensure that the household can take it up?