



Who Will Succeed to Returns?: Technology adoption, gender, and social norms in Sub-Saharan Africa

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Importance of Technology adoption in rural development

- Technology adoption
 - Important role to improve livelihoods, especially in countries in Africa which have an especially high reliance on agriculture, both for output and jobs (Suri & Udry, 2022, *JEP*)
- Determinants of technology adoption
 - Social learning, credit constraint, gender of decision makers, and net returns etc (Suri, 2011, *ECMA*; Takahashi et al., 2020, *Agric Econ*; Conley & Udry, 2001, *AJAE*; Matsuura et al., 2023, *IDE Discussion Papers*)

What people have not discovered

- A remained and underexplored aspect of the determinants is kinship system (Di Falco, et al., 2023, *EAAE Conference Paper*)
- If farmers have their children, the children may success their farmland and business
- In Sub-Saharan Africa, there are unique kinship systems: Patrilineal and matrilineal societies
- Gender of first born matters? Social norms matters?

Research questions and contributions

Research questions

- Does gender of first-born affect decisions of farm investment?
- If yes, does it vary across kinship systems?

Contributions

- (Almost) first study examining the relationship between gender of first born and farm investment
- First study discovering whether the causal relationship stems from social norms

Data and Empirical strategy

- Data

- Rural Agricultural and Livelihood Survey 2012, 2015 (Zambia)
- Nationally representative and balanced panel ($N \times T = 13,926$)

- Specification

- $$Y_{it} = \alpha_1 + \alpha_2 Firstson_{it} + \alpha_3 Firstdaughter_{it} + \alpha_4 X_{it} + t_t + g_p + e_{it}$$
- Estimated by seeming uncorrelated regression
- Assumption
 - gender of first born is exogenous

Gender of first born does not matter, on average

	(1) Soil and land management	(2) Agroforestry	(3) Irrigation
First son	-0.021 (0.033)	-0.022 (0.024)	-0.022 (0.016)
First daughter	-0.030 (0.033)	-0.002 (0.024)	0.026 (0.016)
Control variables	Yes	Yes	Yes
Province FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	13,926	13,926	13,926

Contrast with Di Falco, et al. (2023)

p<0.1, ** p<0.05, *** p<0.01

Outcome variables are areas of farm investment (ha)

Social norms would be important

	(1) Soil and land management	(2) Agroforestry	(3) Irrigation
First son	-0.021 (0.033)	-0.022 (0.024)	-0.022 (0.016)
First daughter	-0.062 (0.040)	-0.005 (0.029)	-0.001 (0.019)
First daughter × Matrilineal	0.085 (0.061)	0.008 (0.045)	0.071** (0.029)
Control variables	Yes	Yes	Yes
Province FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	13,926	13,926	13,926

* p<0.1, ** p<0.05, *** p<0.01

Conclusions and future outlook

RQ1: Does gender of first-born affect decisions of farm investment?

- Yes, but first-born son does not affect the decision

RQ2: Does it vary across kinship systems?

- First daughter only in matrilineal households increases adoption of irrigation

- Why only for first daughter in matrilineal households?
- External validity must be confirmed in further analysis
 - Tanzania and Malawi

Comments or further information?

- Ask Wataru after this presentation
- Look at my website
masanorimatsuura.github.io

