



# 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

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- 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

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- 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

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## 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

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- 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

	(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

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

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- Gender itself of first born does not matter in farm investment
- Social norms may affect
- External validity must be confirmed in further analysis



# Comments or further information?

- Ask Wataru after this presentation
- Look at my website  
[masanorimatsuura.github.io](https://masanorimatsuura.github.io)

