



Polygamous Households and Intrahousehold Decision-Making: Evidence and Policy Implications from Mali and Tanzania

*C. Leigh Anderson, Travis Reynolds, Pierre Biscaye, Melissa Greenaway,
Josh Merfeld, Evans School Policy Analysis & Research Group (EPAR)*

Inequalities: Addressing the Growing Challenge for Policymakers Worldwide

June 14, 2016 APPAM International Conference



Presentation Overview

- Why is decision-making authority important?
- Theory and Research Question
- Defining and Measuring Decision-making Authority
- Polygamy in Mali and Tanzania
- Analysis: Farmer First Data
- Empirical Results
- Conclusions



Why Does Intra-household Decision-Making Authority Matter?

Terminology:

Bargaining is the mechanism through which decision-making authority is allocated

Decision-making authority is an outcome of bargaining

Relevance (policy/program targeting):

Decision-making authority is associated with:

- variable household outcomes around health, education and reproduction
- empowerment

Defining and Measuring Decision-Making Authority





Theory: Factors associated with bargaining or decision-authority

- **Income** (Lundberg and Pollak 1996; Elder and Rudolph, 2003)
- **Capital assets** (Friedberg and Webb, 2006; Martinez, 2013)
- **Education** (Bertocchi et al., 2012; Doss, 2013)
- **Health** (Anderson et al., 2012)
- **Norms**





Research Question

How does decision-making authority differ in polygamous vs. monogamous households?

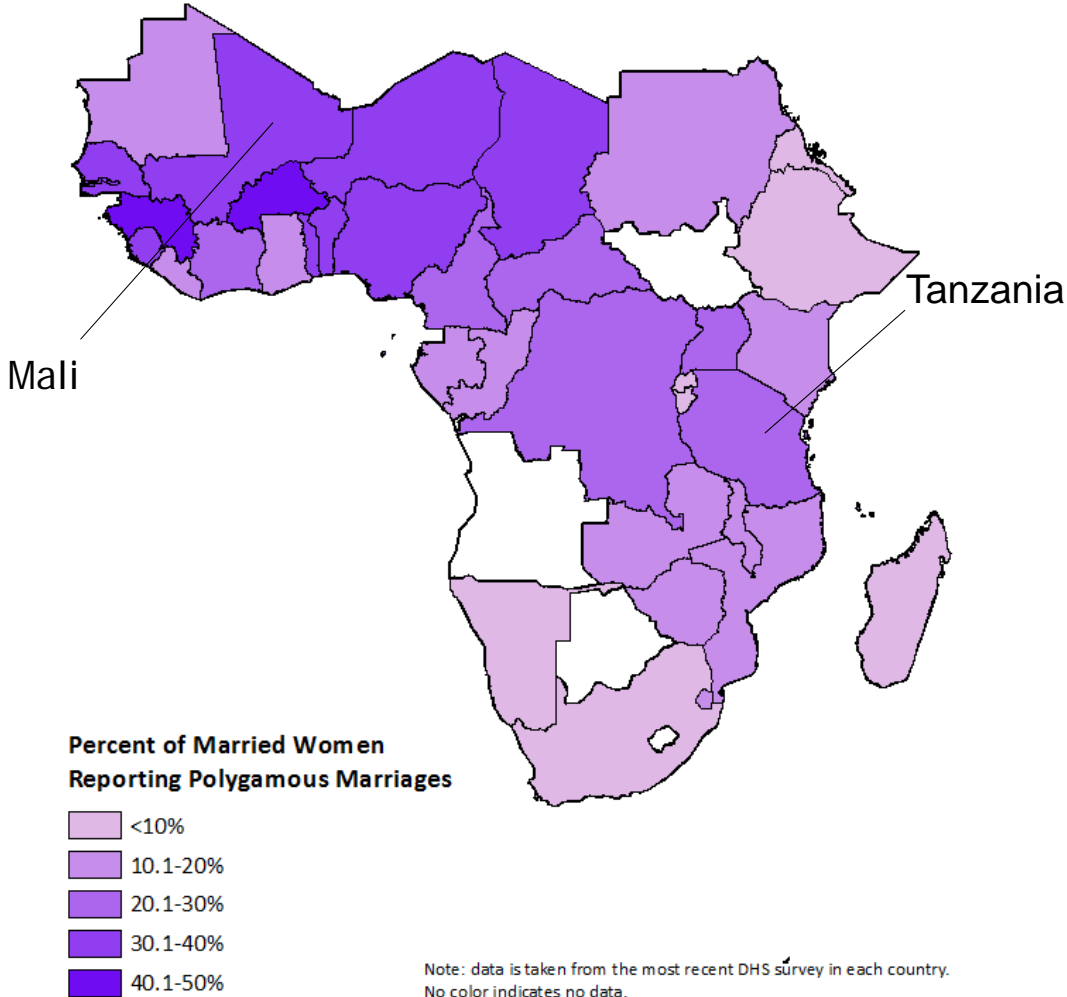
Small literature with conflicting results on hh outcomes

Hypothesized avenues:

- *Value of productivity gains from any single wife's assets decline faster*
- *Reduced threat of exiting*



Polygamy in Sub-Saharan Africa



- Polygamy concentrated in West Africa
- Less prevalent moving east and south

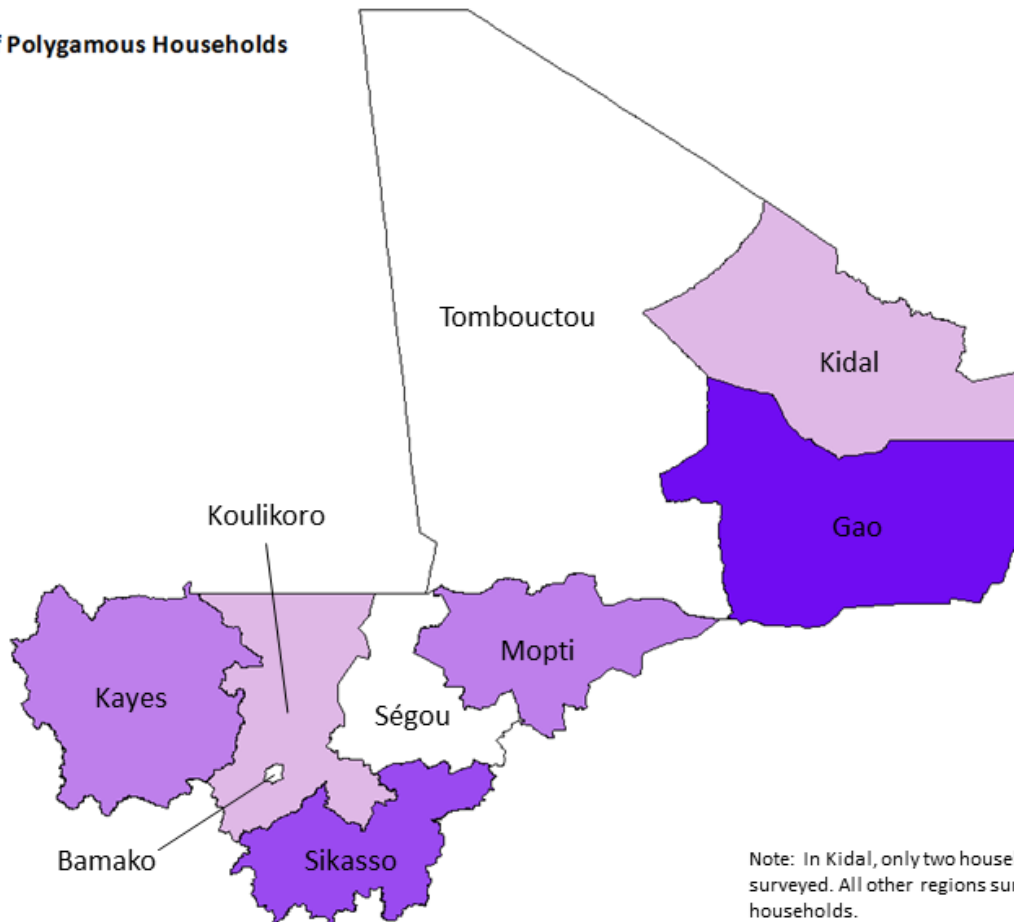
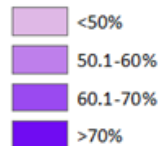
Source: Spatial Data Repository, ICF International
Evans School Policy Analysis and Research Group (EPAR)

Farmer First Data and Survey Design

- Survey of farmers in Tanzania and Mali in October 2010
- Data collected from 1,766 households in Mali and 1,997 households in Tanzania
- Husbands and wives answered questions separately

Polygamy in Mali

Percentage of Polygamous Households



Note: In Kidal, only two households were surveyed. All other regions surveyed at least 100 households.
No color indicates no data.

- Polygamy prevalent across country
- Over half of survey households report polygamy (55%)

Source: Farmer First Survey, TNS International
Evans School Policy Analysis and Research Group (EPAR)

Polygamy in Mali and Tanzania

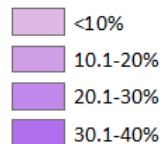


Polygamy in Tanzania



- Polygamy less prevalent than in Mali
- 13% of survey households report polygamy on average

Percentage of Polygamous Households



Source: Farmer First Survey, TNS International

Note: Sample sizes in surveyed regions range from 50 households to 192 households
No color indicates no data

Polygamy in Mali and Tanzania



Decision-Making Questions

Farm and cash decisions:

- *What crops to cultivate in the farm?*
- *Where to sell cash crops?*
- *When to sell off livestock?*
- *How to spend cash from the sale of cash crops?*
- *How to spend cash from the sale of livestock?*

Decisions about children:

- *What foods to feed the family?*
- *Whether to send children to school?*

Innovation decisions:

- *Whether to buy a new high-yield seed variety or use the ordinary seeds?*
- *Whether to buy new farm equipment or stay with the old tools?*
- *What types of information or training the household needs?*
- *Who to attend farm training?*

Broad decision-making authority:

- *What happens in the farm generally?*
- *Overall decision-making for the household?*

Household Summary Statistics

	Mali	Tanzania
Polygamous (Yes=1)	0.55	0.13
Asset score	26.84	23.51
Acres	5.81	8.22
Acres owned	1.35	1.25
Household hired any labor	0.63	0.53
Number of girls under 10	0.66	0.49
Number of boys under 10	0.81	0.48
Number of seniors (age \geq 60)	0.68	0.21
Distance to nearest tarmac road (km)	8.74	45.30
Distance to nearest market (km)	7.02	10.46
Observations (hhs)	1431	1978

Individual Summary Statistics

	Mali		Tanzania	
	Men	Women	Men	Women
Personal Characteristics				
Education (years)	2.06	1.43	2.04	1.89
Health (1 - Lowest; 5 - Highest)	3.91	3.92	4.06	4.00
Age (years)	51.27	39.51	45.71	37.56
Decision Variables				
What happens on the farm generally	2.32 (2.31)	3.61 (3.34)	4.20 (1.24)	4.02 (1.45)
What crops to plant	2.33 (2.50)	3.56 (3.42)	4.31 (1.27)	4.29 (1.34)
Where to sell crops	3.48 (3.44)	4.30 (3.79)	4.32 (1.64)	4.17 (1.74)
How to spend profits from crop sales	3.42 (3.46)	4.17 (3.82)	4.15 (1.60)	4.05 (1.77)
What foods to feed family	4.47 (3.09)	5.13 (3.43)	4.93 (1.65)	5.04 (1.80)
When to sell livestock	3.50 (3.74)	4.31 (4.06)	5.12 (2.66)	4.95 (2.68)
How to spend profits from livestock sales	3.54 (3.67)	4.38 (3.98)	5.04 (2.75)	4.79 (2.74)
Child schooling	3.03 (2.71)	3.84 (3.36)	4.66 (1.87)	4.60 (1.86)
What seed variety (e.g. high yielding) to buy	2.64 (3.07)	3.59 (3.68)	4.44 (1.54)	4.43 (1.71)
Whether to buy new farm equipment	2.20 (2.79)	3.17 (3.58)	4.17 (1.47)	4.11 (1.58)
Whether to attend farm training	4.19 (3.96)	4.31 (3.90)	5.24 (2.62)	5.32 (2.73)
What type of info/training household needs	4.69 (4.17)	5.46 (4.20)	4.92 (2.31)	4.93 (2.48)
Observations	1402	1315	1929	1858



Methods

- Factor Analysis
 - Combined most decisions into 3 indices
- Regression Analysis
 - Assessed polygamy's association with a wife's decision-making authority
- Regression Analysis with Interaction Terms
 - Looked at polygamy's influence on correlates of decision-making authority (education and health)



Methods: Factor Analysis

Factor Loadings for Decision Variables

	Factor 1	Factor 2	Factor 3
What happens on the farm generally	0.623	0.202	-0.206
What crops to plant	0.639	0.201	-0.257
Where to sell crops	0.647	0.097	-0.163
How to spend profits from crop sales	0.613	0.050	-0.111
What seed variety (e.g. high yielding) to buy	0.594	0.130	-0.037
Whether to buy new farm equipment	0.554	0.079	-0.010
What foods to feed family	0.287	0.060	0.090
When to sell livestock	0.580	-0.553	0.027
How to spend profits from livestock sales	0.569	-0.563	0.028
Child schooling	0.436	0.057	-0.021
Whether to attend farm training	0.445	0.137	0.489
What type of info/training household needs	0.448	0.158	0.507

Wife's Share of Decision-Making (Tz and Mali pooled)

	Wife to herself			Husband to his wife		
	Farm Index	Livestock Index	Information and Training	Farm Index	Livestock Index	Information and Training
Polygamous (Yes=1)	-0.189***	-0.499***	-0.413***	-0.039	-0.326**	-0.553***
Asset score	0.006	0.009	0.002	0.003	0.007	-0.003
Acres	-0.002	-0.013***	0.000	-0.001	-0.011**	-0.008**
Count of Children under 10	0.004	-0.128	-0.036	-0.099**	-0.192**	-0.043
Count of Seniors (age>=60)	0.002	-0.138	-0.108	0.011	0.009	-0.091
Age (Wife) (Years)	0.005	0.001	-0.003	0.004	0.008	-0.005
Age (Husband)	0.002	0.010*	0.002	0.000	-0.009	0.009
Education (Wife) (Years)	0.081*	0.003	-0.059	-0.037	-0.089	-0.156**
Education (Husband)	-0.021	-0.079	-0.031	0.007	0.003	0.090**
Health (Wife) (1 - Lowest; 5-Highest)	0.037	0.272*	0.113	0.125**	0.133	0.085
Health (Husband)	-0.108*	-0.124	-0.158*	-0.026	0.076	-0.045
Adjusted R ²	0.181	0.148	0.143	0.238	0.162	0.165
Observations	2825	2825	2814	2825	2825	2819

Effect of Education by Polygamy Status - Beans Allocated to Wife

	Wife Reports			Husband Reports		
	Farm Index	Livestock Index	Information and Training	Farm Index	Livestock Index	Information and Training
Polygamous (Yes=1)	-0.175	-0.412**	-0.353	0.201**	0.049	-0.477*
Education (Wife) (Years)	0.084*	0.025	-0.044	0.023	0.006	-0.137*
Polygamous times wife's education	-0.009	-0.055	-0.038	-0.152***	-0.238**	-0.048
Asset score	0.006	0.009	0.002	0.003	0.006	-0.003
Acres	-0.002	-0.013***	0.000	-0.001	-0.011**	-0.008**
Count of Children under 10	0.004	-0.129	-0.036	-0.100**	-0.195**	-0.043
Count of Seniors (age>=60)	0.002	-0.137	-0.107	0.014	0.013	-0.090
Age (Wife) (Years)	0.005	0.001	-0.003	0.004	0.008	-0.005
Age (Husband)	0.002	0.010*	0.002	-0.000	-0.009	0.009
Education (Husband)	-0.021	-0.079	-0.031	0.008	0.004	0.091**
Health (wife) (1 - Lowest; 5-Highest)	0.038	0.273*	0.113	0.128**	0.137	0.085
Health (Husband)	-0.108*	-0.124	-0.159*	-0.027	0.075	-0.045
Adjusted R ²	0.181	0.148	0.143	0.239	0.163	0.165
Observations	2825	2825	2814	2825	2825	2819



Conclusions

- Some evidence that correlates of decision-making power vary by polygamy status
- Women have less authority in polygamous households in multiple categories of decision-making
- Decision-making authority is perceived differently by men and women
- Understanding areas where women naturally have decision-making authority could identify areas of opportunity for policies





Evans School Policy Analysis & Research Group (EPAR)

Professor C. Leigh Anderson, Principal Investigator

Professor Travis Reynolds, co-Principal Investigator

Pierre Biscaye, Melissa Greenaway, & Josh Merfeld

EPAR uses an innovative student-faculty team model to provide rigorous, applied research and analysis to international development stakeholders. Established in 2008, the EPAR model has since been emulated by other UW schools and programs to further enrich the international development community and enhance student learning.

Please direct comments or questions about this research to Principal Investigators C. Leigh Anderson and Travis Reynolds at epar.evans.uw@gmail.com.

