

Initial intergenerational wealth estimates for Usangu, Tanzania

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1 Description of data

These data come from several field seasons in Usangu, Tanzania, from 1997-2000. Most of the individuals are ethnically Sangu, a Bantu group closely related to the Hehe of Iringa. The Sangu were an expansive and well-organized chiefdom prior to and during the German colonial period. During that time, they amassed tremendous livestock wealth. The chiefdom is now a weak and mainly nominal institution.

There are three wealth variables:

- Cattle: Number of cattle in autonomous son's household, or number of cattle in married daughter's household.
- Acres rice: Acres of rice under cultivation.
- Acres corn: Acres of corn under cultivation.

For most analyses, I sum acres rice and acres corn. The separate estimates are in the appendix. Analyzing rice and corn separately makes little difference in the estimates.

Coefficients of variation, variances, and sample gini coefficients of the logged values of cattle wealth and summed rice and corn acres are presented in Table 1. Summary statistics for all the variables are presented in Table 2. Table 3 gives the pairwise-complete Pearson correlations among the continuous variables.

Table 1: Coefficients of variation, variances, and sample gini coefficients of the logged values of cattle wealth and summed rice and corn acres.

Variable ($\ln(w + 1)$)	Coefficient of variation	Variance	Gini
Cattle	1.251954	4.389463	0.6490623
Father cattle	1.000454	5.609531	0.5499155
Acres rice and corn	0.4253481	0.5315761	0.2268545
Father acres r & c	0.5468744	1.0383044	0.2592477

Table 2: Summary statistics for variables used in the analyses.

Age	Gender	Ethnicity	Community
Min. :19.0	F:113	Nyakyusa: 32	Ukwaheri:123
1st Qu.:27.0	M:125	Sangu :169	Utengule:115
Median :34.5		Sukuma : 37	
Mean :38.1			
3rd Qu.:45.0			
Max. :85.0			
NA's :22.0			
Acres.rice	Cattle	Education	Religion
Min. : 0.000	Min. : 0.00	Min. : 0.000	:142
1st Qu.: 1.000	1st Qu.: 0.00	1st Qu.: 0.000	I: 1
Median : 2.000	Median : 0.00	Median : 5.000	i: 29
Mean : 2.372	Mean : 61.49	Mean : 3.958	p: 51
3rd Qu.: 3.000	3rd Qu.: 27.50	3rd Qu.: 7.000	x: 15
Max. : 20.000	Max. :3000.00	Max. :11.000	
NA's :113.000	NA's : 23.00	NA's :23.000	
Father.Cattle	Father.acres.corn	Father.acres.rice	
Min. : 0.0	Min. : 0.000	Min. : 0.00	
1st Qu.: 0.0	1st Qu.: 1.750	1st Qu.: 0.00	
Median : 6.0	Median : 2.000	Median : 2.00	
Mean : 93.3	Mean : 4.292	Mean : 17.38	
3rd Qu.:100.0	3rd Qu.: 4.000	3rd Qu.: 4.00	
Max. :2000.0	Max. : 70.000	Max. :600.00	
NA's : 26.0	NA's :154.000	NA's :158.00	

Table 3: Correlation matrix.

	Age	Acres.rice	Acres.corn	Cattle
Age	1.00000000	0.06242839	0.15646139	0.11429536
Acres.rice	0.06242839	1.00000000	0.12668925	-0.13159467
Acres.corn	0.15646139	0.12668925	1.00000000	0.48672213
Cattle	0.11429536	-0.13159467	0.48672213	1.00000000
Education	-0.49867762	-0.04704505	-0.26758704	-0.21859360
Father.Cattle	-0.02499705	-0.08649015	0.21266603	0.52580429
Father.acres.corn	-0.00986077	-0.04405435	0.03114396	0.03689119
Father.acres.rice	-0.09809484	0.07026227	-0.09016699	-0.06967888
	Education	Father.Cattle	Father.acres.corn	
Age	-0.49867762	-0.02499705	-0.00986077	
Acres.rice	-0.04704505	-0.08649015	-0.04405435	
Acres.corn	-0.26758704	0.21266603	0.03114396	
Cattle	-0.21859360	0.52580429	0.03689119	
Education	1.00000000	-0.19490895	-0.14948888	
Father.Cattle	-0.19490895	1.00000000	0.22294721	
Father.acres.corn	-0.14948888	0.22294721	1.00000000	
Father.acres.rice	0.18886028	0.37715162	0.28100624	
	Father.acres.rice			
Age	-0.09809484			
Acres.rice	0.07026227			
Acres.corn	-0.09016699			
Cattle	-0.06967888			
Education	0.18886028			
Father.Cattle	0.37715162			
Father.acres.corn	0.28100624			
Father.acres.rice	1.00000000			

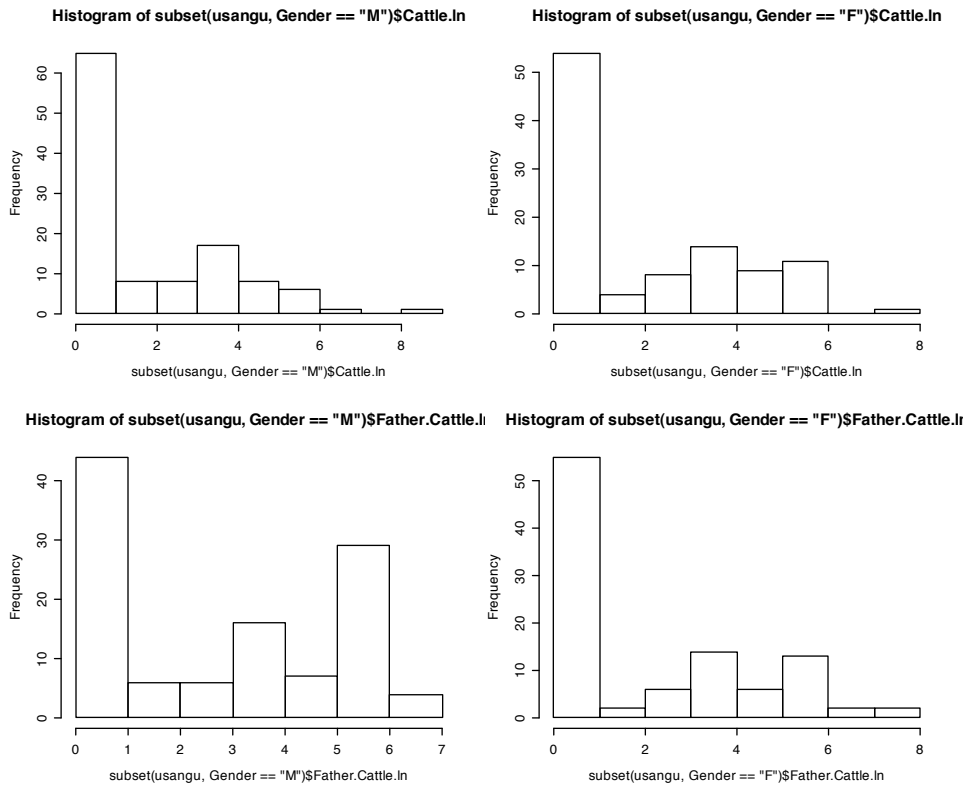


Figure 1: Histograms of logged cattle wealth. Upper-left: sons; upper-right: daughters; lower-left: sons' fathers; lower-right: daughters' fathers.

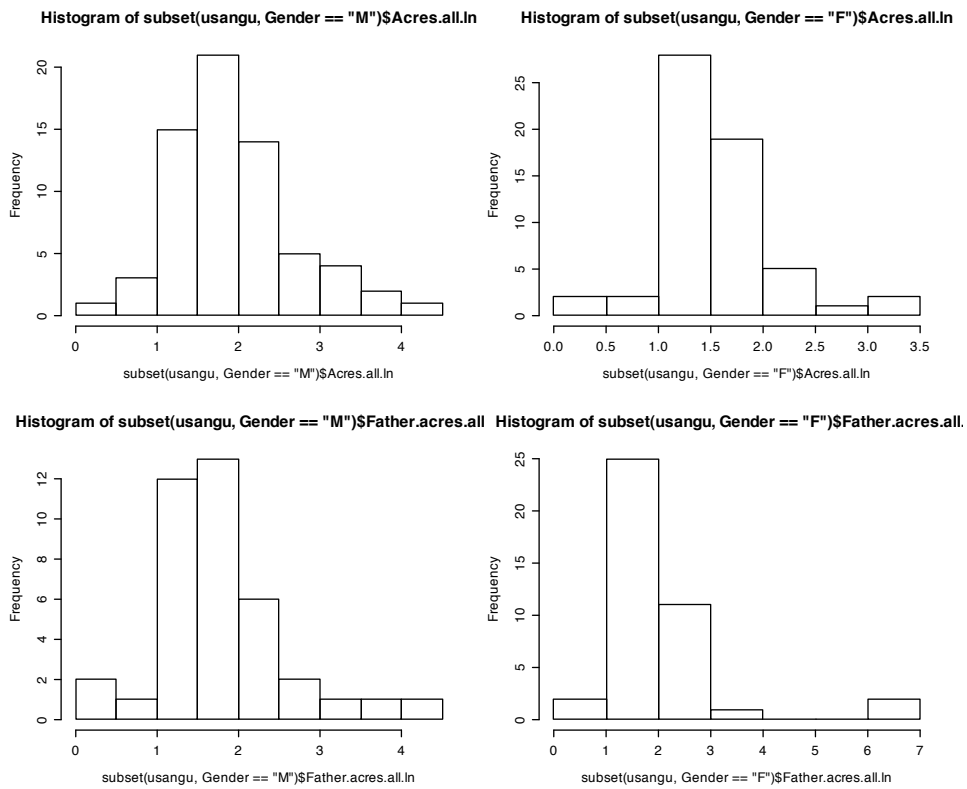


Figure 2: Histograms of logged sum rice and corn acreage. Upper-left: sons; upper-right: daughters; lower-left: sons' fathers; lower-right: daughters' fathers.

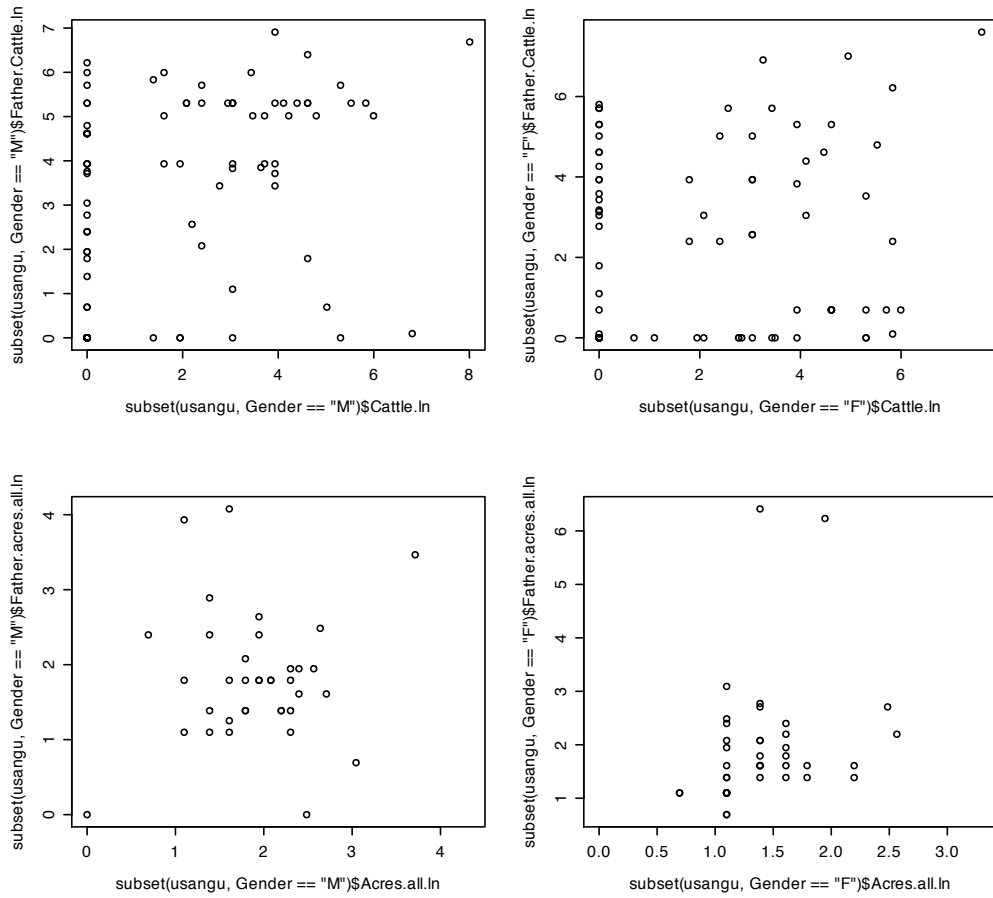


Figure 3: Scatter plots of offspring logged wealth against father logged wealth. Upper-left: sons' cattle; upper-right: daughters' cattle; lower-left: sons' rice and corn; lower-right: daughters' rice and corn.

2 Estimates

The following tables present the estimates of four models, for each gender-wealth combination: sons-cattle, daughters-cattle, sons-acres, daughters-acres.

Table 4: Cattle wealth regressions, sons.

Row.names	MODEL.1	MODEL.2	MODEL.3	MODEL.4
(Intercept)	0.4644 (0.2548)	-0.9485 (0.5341)	-0.445952 (0.8113)	1.4562 (0.3406)
w1	0.4092 (0.07093)	0.4079 (0.06852)	0.363175 (0.08633)	0.3390 (0.06872)
Age	<NA>	0.0344 (0.01154)	<NA>	<NA>
Age.from.30	<NA>	<NA>	-0.044639 (0.0861)	<NA>
Age.squared	<NA>	<NA>	0.000724 (0.0008753)	<NA>
w1:Age.from.30	<NA>	<NA>	0.005321 (0.005188)	<NA>
Education	<NA>	<NA>	<NA>	-0.1922 (0.04763)
df	110	109	107	108
R2	0.2323	0.2901	0.2990	0.3333
AdjR2	0.2253	0.2771	0.2728	0.3209

Table 5: Cattle wealth regressions, daughters.

Row.names	MODEL.1	MODEL.2	MODEL.3	MODEL.4
(Intercept)	1.3973 (0.2859)	0.15626 (0.5762)	0.7663404 (0.9357)	2.78918 (0.3699)
w1	0.2112 (0.09302)	0.20680 (0.09068)	0.2499784 (0.09613)	0.09584 (0.08576)
Age	<NA>	0.03657 (0.01486)	<NA>	<NA>
Age.from.30	<NA>	<NA>	0.0135995 (0.07881)	<NA>
Age.squared	<NA>	<NA>	0.0004253 (0.000864)	<NA>
w1:Age.from.30	<NA>	<NA>	-0.0093601 (0.006976)	<NA>
Education	<NA>	<NA>	<NA>	-0.29306 (0.05715)
df	96	95	93	94
R2	0.05098	0.1078	0.1261	0.2575
AdjR2	0.04109	0.08907	0.08852	0.2417

3 Interpretation

x

4 Discussion of directions

x

Table 6: Total rice and corn acres, sons.

	Row.names	MODEL.x	MODEL.y	MODEL.x.1	MODEL.y.1
1	(Intercept)	1.80424 (0.2619)	1.20089 (0.4793)	2.249803 (0.4983)	2.23361 (0.2410)
9	w1	0.05808 (0.1310)	0.13131 (0.1378)	0.308107 (0.1285)	0.04086 (0.1088)
3	Age	<NA>	0.01221 (0.00818)	<NA>	<NA>
4	Age.from.30	<NA>	<NA>	0.155703 (0.04837)	<NA>
5	Age.squared	<NA>	<NA>	-0.001171 (0.0005189)	<NA>
10	w1:Age.from.30	<NA>	<NA>	-0.022187 (0.00816)	<NA>
6	Education	<NA>	<NA>	<NA>	-0.10163 (0.02474)
8	df	35	34	32	34
7	R2	0.005583	0.06672	0.345	0.3354
2	AdjR2	-0.02283	0.01182	0.2631	0.2963

Table 7: Total rice and corn acres, daughters.

	Row.names	MODEL.x	MODEL.y	MODEL.x.1	MODEL.y.1
1	(Intercept)	1.2048 (0.1254)	1.347311 (0.2066)	1.5434713 (0.2583)	1.223561 (0.1421)
9	w1	0.1019 (0.05587)	0.097019 (0.05633)	0.0696621 (0.05567)	0.105804 (0.05804)
3	Age	<NA>	-0.003774 (0.004341)	<NA>	<NA>
4	Age.from.30	<NA>	<NA>	0.0038910 (0.02723)	<NA>
5	Age.squared	<NA>	<NA>	-0.0002712 (0.0002243)	<NA>
10	w1:Age.from.30	<NA>	<NA>	0.0119270 (0.007827)	<NA>
6	Education	<NA>	<NA>	<NA>	-0.005809 (0.01979)
8	df	39	38	36	38
7	R2	0.07866	0.09663	0.2071	0.08074
2	AdjR2	0.05503	0.04909	0.1190	0.03236