Land rental as a complementary income source for land-poor youth

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Motivation

- *Continued high population growth in already densely populated rural areas in parts of Sub-Saharan Africa makes it harder for youth to choose agriculture as their main source of income*

- *We investigate whether near landless youth can still access rented land as a complementary source of income*

Development context: Ethiopia

- Youth underemployment and growing landlessness: Densely populated areas with rapid population growth

- Rural transformation

- Policy initiative & experiment: Provide new livelihood opportunities for youth

- Establishment of formal youth business groups
    - Establish primary cooperatives under cooperative law
    - Allocated a land or mineral resource/task responsibility
    - Self-organize, own bylaw, business plan, board, auditing

Our youth research

Are Rural Youth in Ethiopia Abandoning Agriculture?

SOSINA BEZU and STEIN HOLDEN[*]
Norwegian University of Life Sciences, Aas, Norway

- Rapid growth in landless youth in rural areas
- Accellerating youth migration: Rural-urban & international

- Bezu, S. and Holden, S.T. (2014). Rural-urban Youth Migration and Informal Self-Employment in Ethiopia. CLTS Report No. 1/2014. Centre for Land Tenure Studies, Norwegian University of Life Sciences, Aas, Norway
- Bezu, S. and Holden, S. T. (2015). Street based self-employment: A poverty trap or a stepping stone for migrant youth in Africa? CLTS Working Paper No. 4/2015. Centre for Land Tenure Studies, Norwegian University of Life Sciences, Aas, Norway.
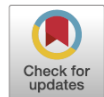
Our youth research: Youth business groups
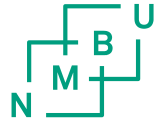
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The importance of Ostrom's Design Principles: Youth group performance in northern Ethiopia

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- **Compliance with Ostrom's Design Principles in youth business groups is correlated with higher within-group trust & other performance indicators**

Focus and Research Questions
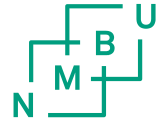
- This paper investigates the potential of the land rental market to provide complementary income to the youth who have joined this type of youth business groups.

- Ethiopia has a well developed land rental market while land sales are prohibited

- **Research Questions:**

- Can the land rental market be an important complementary source of land and income and thereby stabilize and secure the livelihood of youth business group members?

- What constraints do youth face in their attempts at accessing land through the land rental market and what are the conditions that enhance such access?

- How important is land renting compared to other sources of income?

Hypotheses

- The land rental market potentially can be an important complementary source of income
  - This depends on gender, farm endowments and social capital (trust and trustworthiness) of youth group members, as these factors affect access to land through the land rental market:
    - Men have better access than women
    - Ploughs and oxen are essential endowments for having access
    - Trust and trustworthiness enhance access

Data

- Uses a sample of 119 youth business groups from a census of 740 such groups in five districts in Tigray region of Ethiopia (Holden and Tilahun 2018).

  - Average group size: 19 members

- The census was carried out in early 2016 and collected a range of baseline information on each youth group.

- Survey and Trust experiments with 1142 individual group members in July/August 2016

  - Sample of maximum 12 members from sampled groups
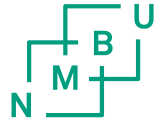
Tigray
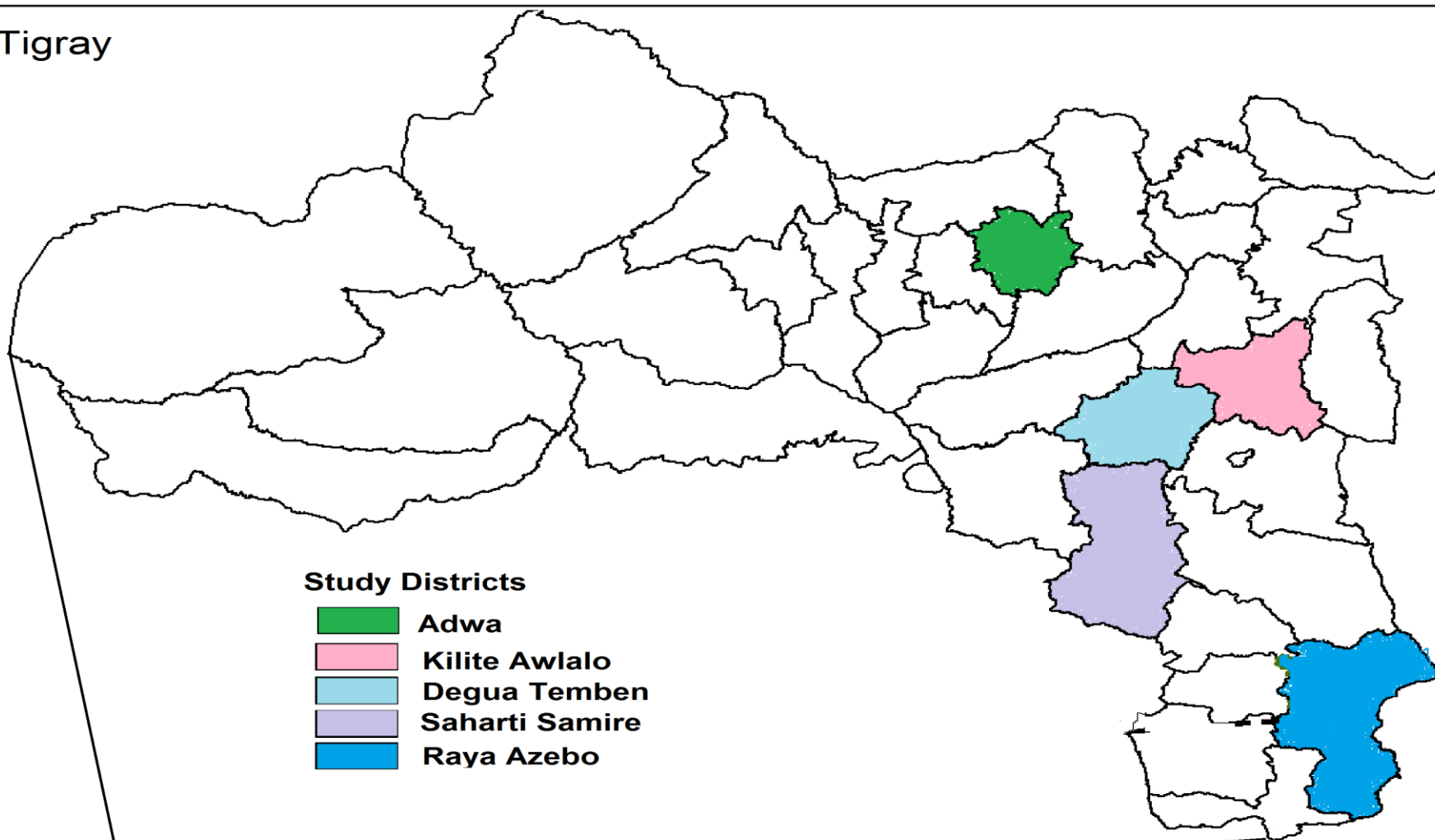
Study Districts
- Adwa
- Kilite Awlalo
- Degua Temben
- Saharti Samire
- Raya Azebo

ETHIOPIA

Group characteristics

- Mostly self-selection into groups
- Land demarcation and allocation by local administrations
- Group required to protect the land area
- Alternative business models (**main production activity**) defined by administrations (based on feasibility/resource base)

Youth group size distribution

Probability distribution vs. Youth group size, number of members

Legend: Group size 2016 — Initial group size
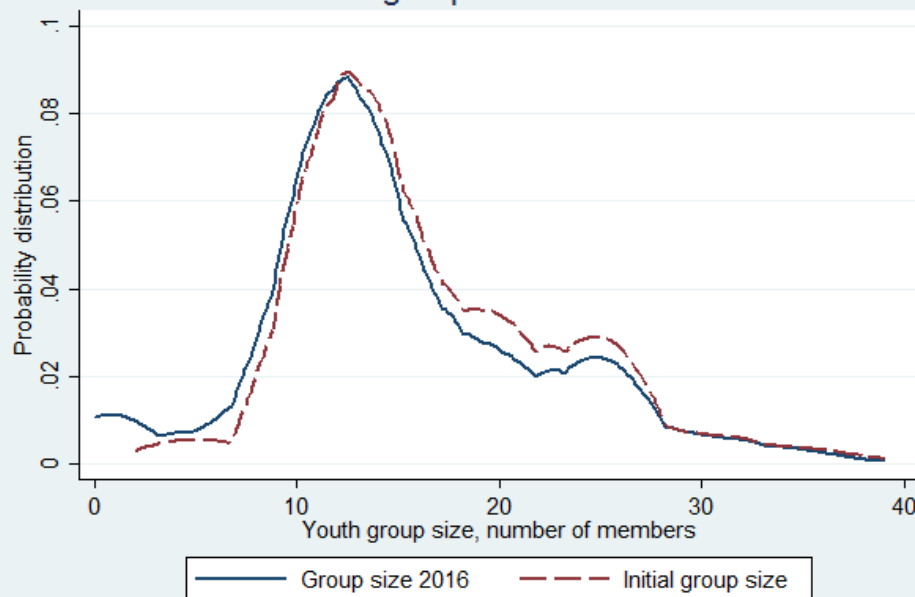
Gender distribution in youth groups

Probability distribution vs. Female share in youth group

Legend: Current female share — Female share at start
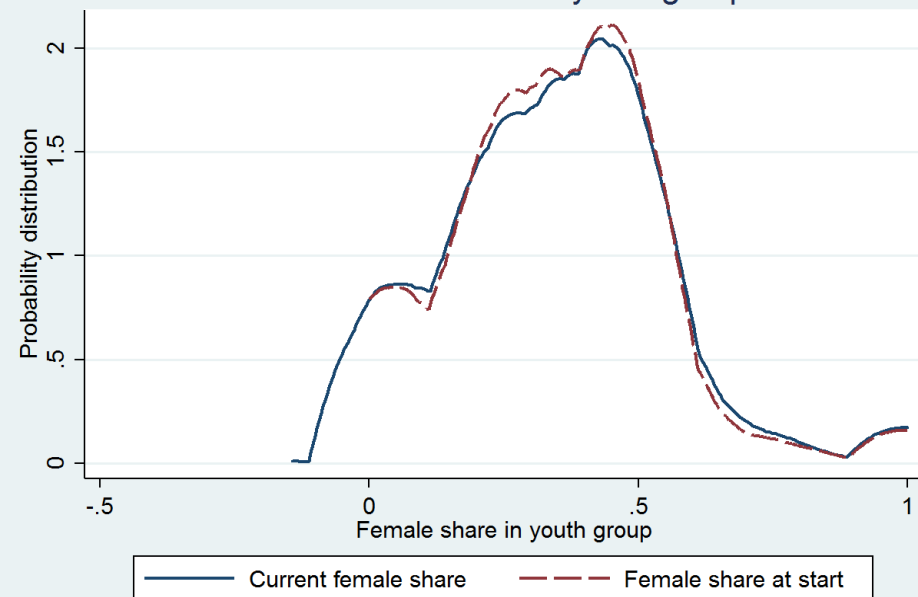
Experimental approach

- Lab-in-the-field experiments: Combine
    - Gneezy and Potters (1997) simple investment game to elicit risk tolerance
    - Berg et al. (1995) standard trust game to measure within-group trust and trustworthiness of members of the youth business groups: Three measures:
        - Trust (share of 30 ETB invested)
        - Stated trustworthiness (stated share of 30 ETB returned)
        - Actual trustworthiness (share returned of amount received)

Estimated equations

- Probability of renting land

$$pr\left(R_{gi}\right) = \alpha_1 A_{gi} + \alpha_2 E_{gi} + \alpha_3 G_{gi} + \alpha_4 T_{gi}^* + c_g + \varepsilon_{gi}$$

- Area rented in (constrained)

$$\overline{R_{gi}} = \beta_1 A_{gi} + \beta_2 E_{gi} + \beta_3 G_{gi} + \beta_4 T_{gi}^* + c_g + \mu_{gi}$$

A_{gi} is the land available for youth group member i in group g from other sources (own land, land of spouse, land of parents).

$\overline{R_{gi}}$ is the rented area accessed

E_{gi} is the non-land endowments of oxen and ploughs that are instrumental for land cultivation,

G_{gi} is the gender variable, a dummy=1 for being male,

T_{gi}^* is a measure of trust or trustworthiness (endogenous)

c_g represents a set of group or higher level controls, and

ε_{gi} and μ_{gi} are error terms.

Estimation strategy

- Instrumental Variable Probit model:

$$pr\left(R_{gi}\right) = \alpha_1 A_{gi} + \alpha_2 E_{gi} + \alpha_3 G_{gi} + \alpha_4 T_{gi}^* + c_g + \varepsilon_{gi}$$

$$T_{gi}^* = \gamma_1 A_{gi} + \gamma_2 E_{gi} + \gamma_3 G_{gi} + \gamma_4 Z_{gi} + c_g + \upsilon_{gi}$$

- Instrumental Variable Tobit model:

$$\overline{R_{gi}} = \beta_1 A_{gi} + \beta_2 E_{gi} + \beta_3 G_{gi} + \beta_4 T_{gi}^* + c_g + \mu_{gi}$$

$$T_{gi}^* = \gamma_1 A_{gi} + \gamma_2 E_{gi} + \gamma_3 G_{gi} + \gamma_4 Z_{gi} + c_g + \upsilon_{gi}$$

- The instruments (risk tolerance and birth rank) were highly significant in the first stage models in all specifications and can be classified as strong instruments

- Overidentification tests could not reject the validity of instruments

Estimation strategy II

- To investigate factors associated with the type of income source the youth have as their most important source of income, we used multinomial logit models.

- Only one specification of this model is included. It presents relative risk ratios and uses own farm as the baseline source of income.
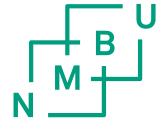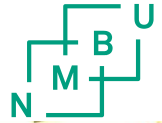
Key findings I

- *Access to rented land is constrained, however,*
  - *Male youth who own oxen and ploughs are much more likely to be able to rent land*
- *Land renting is a complementary income source for 29% of these youth*
- *It is the most important source of income for 16.8% of the youth and the second most important source of income for 14% of the youth*

IV Probit models: Land access

|	(1)	(2)	(3)	(4)	(5)	(6)
Exogenous variables						
Own and spouse land holding tsimdi	-0.0651	-0.0708	-0.0669	-0.0866*	-0.0958*	-0.0928**
	(0.0450)	(0.0498)	(0.0451)	(0.0458)	(0.0499)	(0.0459)
Farm size of parents, tsimdi	-0.110****	-0.102****	-0.110****	-0.128****	-0.117****	-0.131****
	(0.0237)	(0.0258)	(0.0240)	(0.0256)	(0.0283)	(0.0254)
Oxen owned	0.585****	0.553****	0.558****	0.608****	0.557****	0.572****
	(0.0757)	(0.0893)	(0.0849)	(0.0813)	(0.1020)	(0.0919)
Ploughs owned	0.515****	0.442****	0.506****	0.523****	0.397***	0.485****
	(0.1010)	(0.1180)	(0.1070)	(0.1150)	(0.1320)	(0.1220)
Sex=male, dummy	0.368****	0.324***	0.427****	0.366***	0.285**	0.438****
	(0.1090)	(0.1090)	(0.0991)	(0.1150)	(0.1230)	(0.1020)
Endogenous variables, instrum.						
Trust,	1.327**			1.623**		
	(0.6610)			(0.7110)		
Actual trustworthiness		2.478**			3.068***	
		(1.0210)			(1.0090)	
Stated trustworthiness			1.877**			2.247**
			(0.8940)			(0.9200)
Woreda FE	Yes	Yes	Yes	-	-	-
Tabia FE	No	No	No	Yes	Yes	Yes
Main activity FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.462****	-1.525****	-1.513****	-0.816*	-0.727**	-0.852**
	(0.2640)	(0.2270)	(0.2680)	(0.425)	(0.336)	(0.361)
First stage regressions	Trust	Actual tw.	Stated tw.	Trust, share	Actual tw.	Stated tw.
Instruments						
Risk tolerance	0.261****	0.130****	0.178****	0.252****	0.120****	0.177****
	(0.0306)	(0.0273)	(0.0286)	(0.0320)	(0.0277)	(0.0295)
Birth rank	0.00845***			0.00842***		
	(0.0032)			(0.0032)		

Importance of trust in the tenancy market
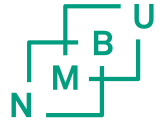
- *We found a positive association between trust and access to rented land.*

- *The importance of trust is also illustrated by the dominance of kinship contracts and contracts with close neighbors reducing the costs of monitoring tenants*
  - *88% of contracts with kin or neighbor partners*
  - *78% of contracts are oral contracts without witnesses*
  - *94% of contracts are sharecropping contracts*
    - *Implies that landlords' returns depend on performance of tenants*

Income sources of youth

August 2015 – July 2016	Rank 1, %	Rank 2, %	Rank 3, %
Youth group activity	6.98	27.56	16.8
Land renting/Sharecropping	16.8	14.04	3.45
Trade	9.56	7.41	3.36
Construction work	10.85	8.7	4.48
Support from family	20.93	10.34	3.53
Own farm	29.2	5.34	1.89
Other, specify	5.68	5.68	3.01
No activity	0	20.93	63.48
Total	100	100	100

Multinomial logit models: Main income source Relative risk ratios
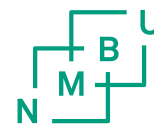
	Youth group activity	Land renting	Trade	Construc-tion Work	Family support	Other
Own and spouse land	0.681*	0.504****	0.589***	0.522***	0.540***	0.480***
tsimdi	(0.1410)	(0.0807)	(0.1170)	(0.1170)	(0.1170)	(0.1300)
Farm size of parents,	1.009	0.829***	0.705****	1.022	1.133**	0.879
tsimdi	(0.0855)	(0.0579)	(0.0689)	(0.0633)	(0.0579)	(0.0924)
Oxen owned	1.581**	1.726****	0.738	0.422****	0.641*	0.901
	(0.3610)	(0.2590)	(0.1710)	(0.1010)	(0.1550)	(0.2130)
Ploughs owned	0.358****	1.034	0.624*	1.034	0.412**	0.548*
	(0.1070)	(0.1890)	(0.1540)	(0.2390)	(0.1820)	(0.1820)
Sex=male, dummy	1.731*	3.702****	2.037***	10.96****	2.134***	1.825**
	(0.5340)	(0.9120)	(0.5600)	(3.8560)	(0.4930)	(0.5180)
Risk tolerance	3.938**	1.907*	1.777	3.026***	1.397	1.700
	(2.4880)	(0.7270)	(0.8920)	(1.2230)	(0.6460)	(0.8310)
Age	0.865****	0.935****	0.924****	0.943***	0.834****	0.942**
	(0.0276)	(0.0132)	(0.0166)	(0.0178)	(0.0270)	(0.0254)
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Main activity FE	Yes	Yes	Yes	Yes	Yes	Yes
N	1128					

Expected main source of income five years into the future

Source of income	Freq.	Percent
Youth group activity	691	60.72
Land renting/Sharecropping	67	5.89
Trade	137	12.04
Construction work	20	1.76
Support from family	9	0.79
Own farm	189	16.61
Other, specify	11	0.97
Do not know/Very uncertain	6	0.53
Missing responses	8	0.7
Total	1,138	100

Conclusions

- We have investigated the potential of the land rental market to serve as a complementary source of income for land-poor rural youth in youth business groups in northern Ethiopia

- We found that land renting was an important source of complementary income for close to 30% of the members

- Land cannot be purchased or sold in Ethiopia and this limits the "agricultural ladder" as a pathway out of poverty for the poor through first renting and then purchasing land.

- The land tenure system constraints may also limit the potential for agricultural transformation
  - Rationing (trust matters) and limited spatial integration in the tenancy market