

Women's Liberation in Action: Evidence from a Randomized Control Trial in Africa

September 2013
IGC Growth Week

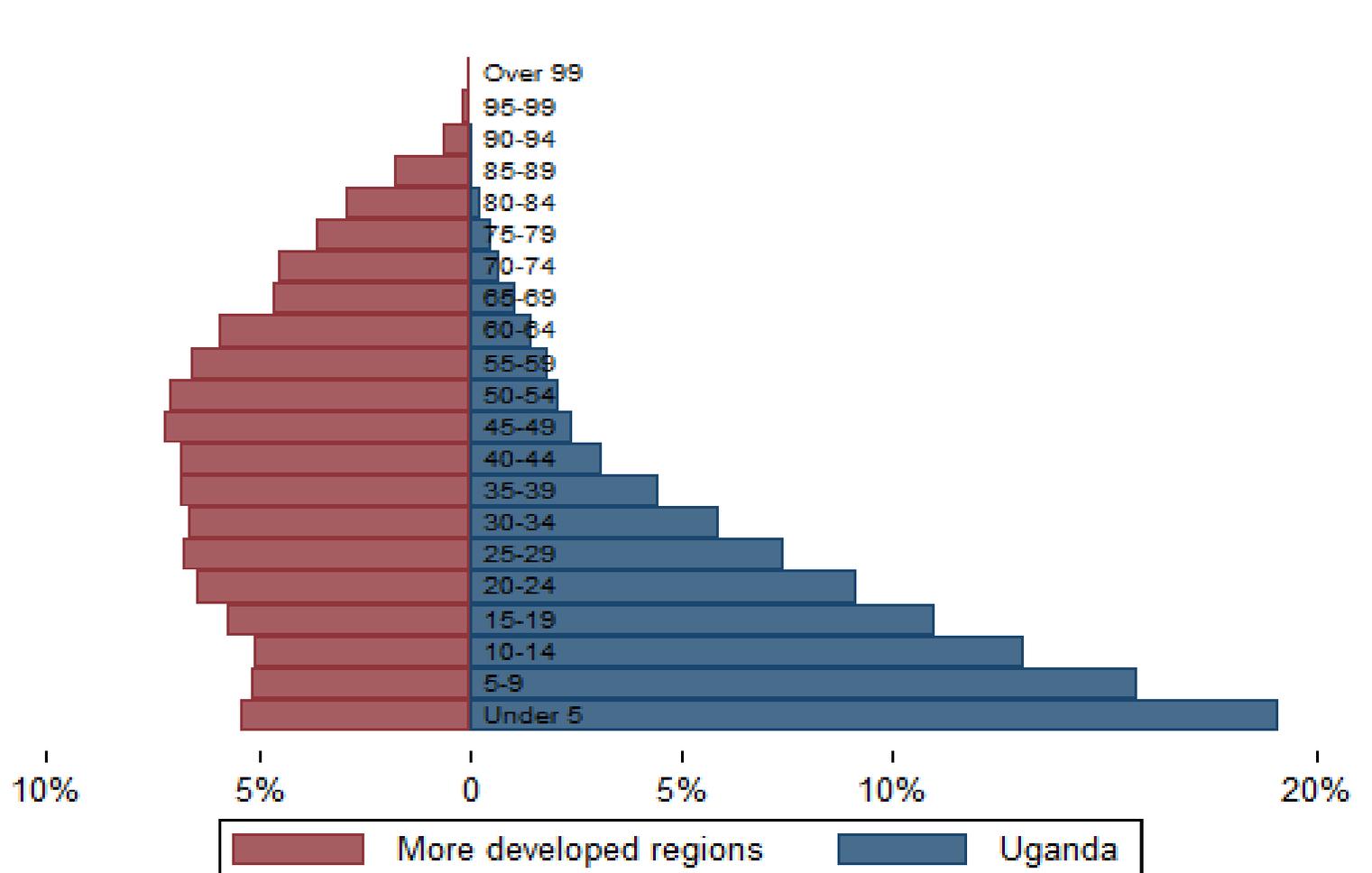
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Introduction

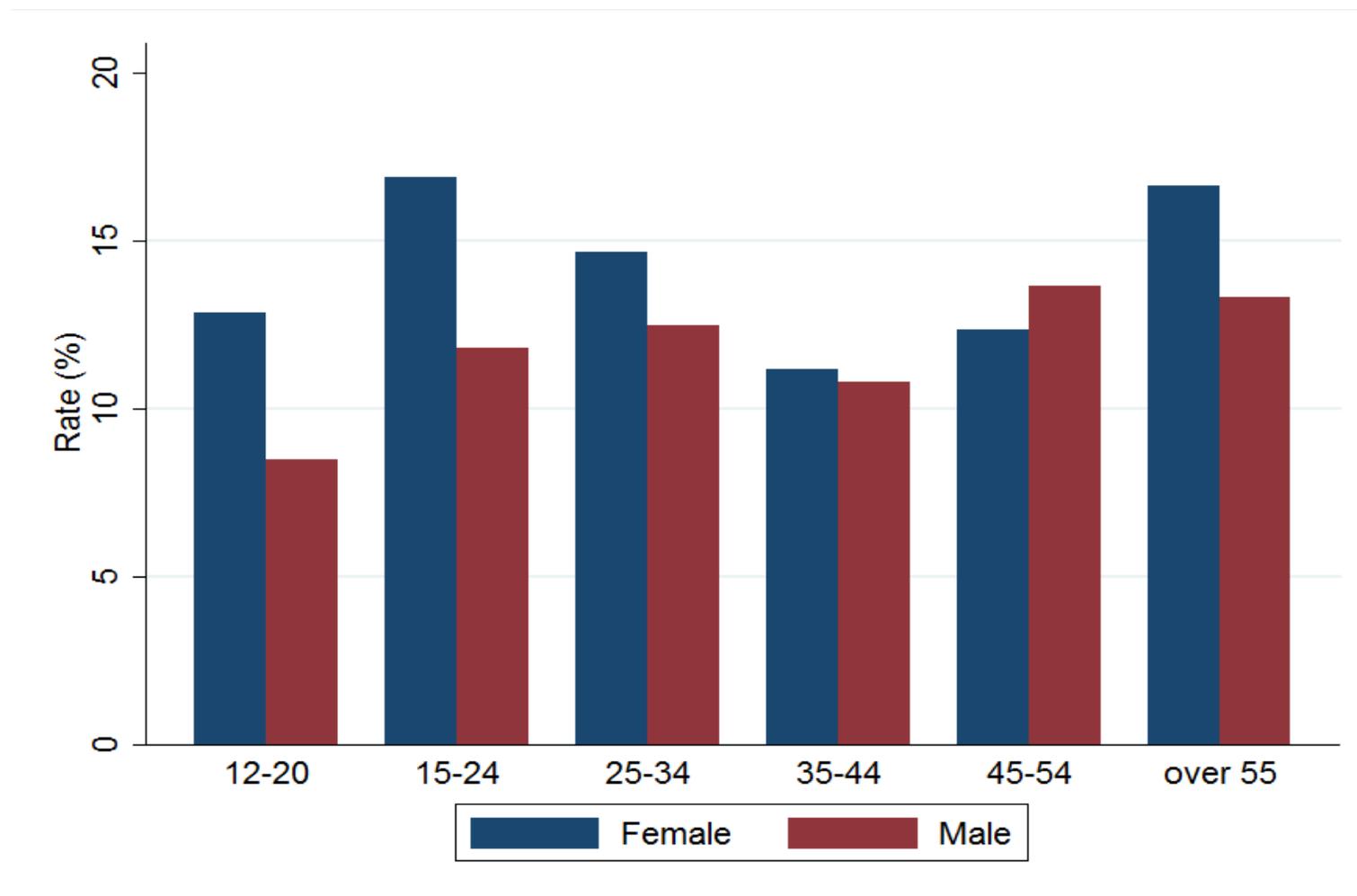
- Youth unemployment major issue across the world
- Two factors typically with adolescents not transitioning into gainful employment
- (1) early pregnancy, early marriage and risky behaviours (Goldin and Katz, Dupas)
- (2) inadequate training and skills (Card et al, Jensen)
- This paper is concerned with whether providing assistance on both these dimensions can change the life trajectories of adolescent girls in Uganda

Female Population by Age, 2010



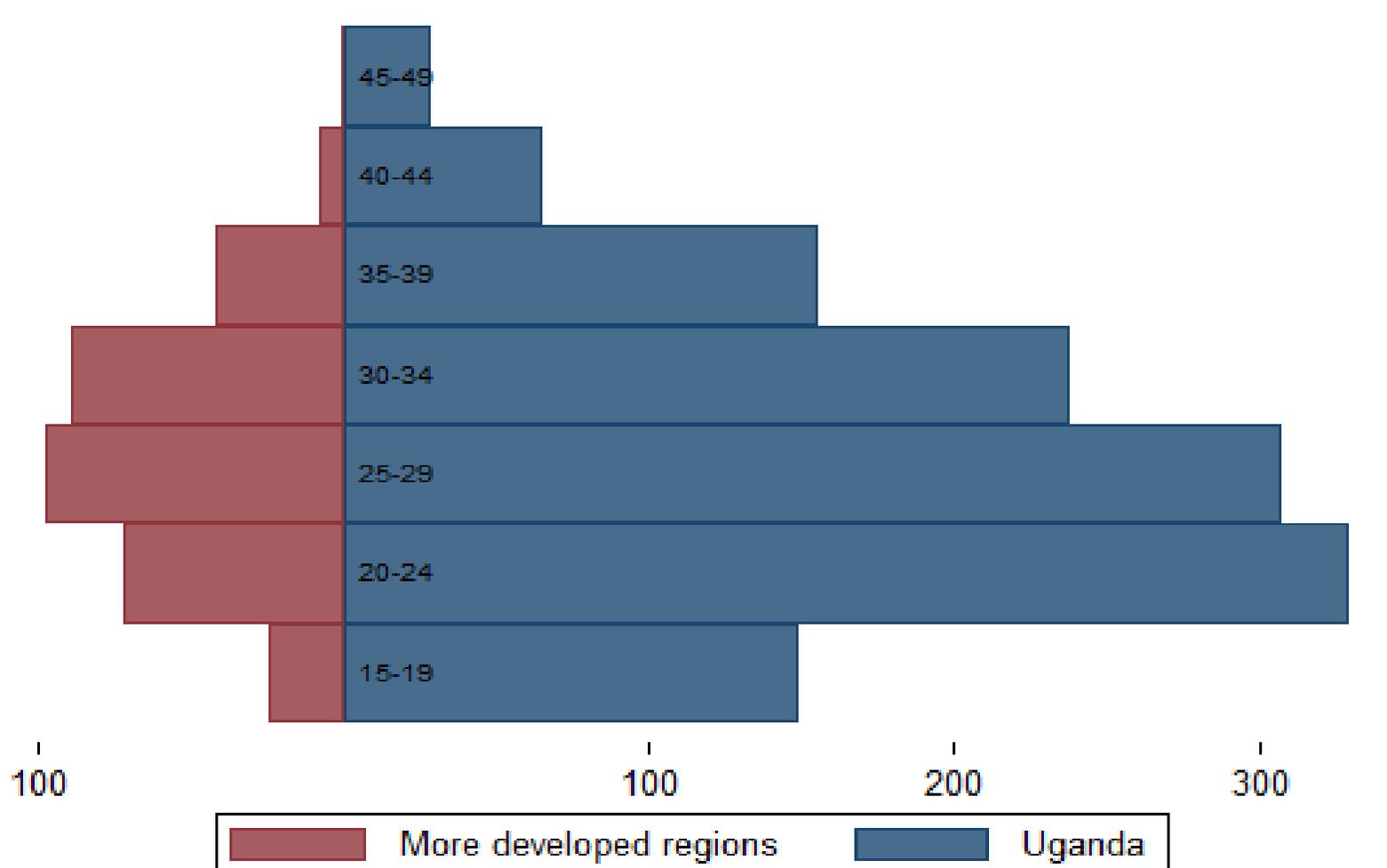
Notes: The data stems from the 2010 UN World Population Prospects data base. More developed regions comprise Europe, Northern America, Australia/New Zealand and Japan.

Unemployment Rates (%), by Age and Gender, Uganda 2006



Notes: Unemployment is defined as those who actively wanted a job but did not participate in any employment activities, inclusively self-employment and agricultural works).

Age-specific Fertility Rate, 1995-2010



Notes: The data stems from the 2010 UN World Population Prospects data base. The fertility rate is measured by the number of births per 1,000 women. More developed regions comprise Europe, Northern America, Australia/New Zealand and Japan.

Some facts...

- 1 billion people aged 15-24 and live in a developing country, 17% increase from 1995 [World Bank, 2009]
- In SSA 60% of the population is below 25
- For adolescent girls, economic challenges are particularly high and compounded by health challenges:
 - Early marriage and child-bearing widespread
 - Exposure to STDs and HIV infection
 - In SSA, girls aged 15-24 are almost 8 times more likely than men to be HIV positive [UN, 2010]

Economic and health issues are likely to be interlinked

Teen pregnancy and motherhood → lower human capital accumulation in youth [Field and Ambrus, 2008]

Lack of future labor market opportunities → lower incentives to invest in human capital [Jensen, 2012], increase likelihood to engage in risky behaviors [Dupas, 2011]

YET,

Many policy interventions targeted to youth focus on:

- HIV education and related issue to reduce risky behaviors

OR

- Vocational training to improve labor market outcomes

This paper:

- Provide evidence from an intervention that attempts to *simultaneously* tackle economic, health and broader empowerment challenges
- BRAC's *Empowerment and Livelihood for Adolescents* (ELA) program:
 - Establishes community youth clubs for girls
 - And provides:
 1. Life skills training (peers) to build knowledge and reduce risky behaviors
 2. Vocational skills training (professionals) to improve self-employment opportunities
- We randomize the roll-out of the program at the community level
 - 150 communities: T:100, C:50
 - Survey 40 girls per community at baseline and 2 years after
 - A 4-year endline survey is just wrapping up

Main Findings:

2 years after baseline...

1. Labor market outcomes:
 - Labor force participation **↑** by 4.3pp (35%)
 - Coming from increased engagement in self-employment
 2. Health outcomes:
 - Improved HIV and pregnancy knowledge
 - Likelihood to have a child **↓** by 2.8 pp (27%)
 - Likelihood to report having had sex unwillingly **↓** by 16pp
 3. Opinions on gender roles and expectations on marriage and childbearing changed:
 - Some shifts in gender roles
 - delayed marriage and pregnancy deemed more attractive
- Targeting informational and skills constraints simultaneously may yield sizable improvements in adolescent girls' lives

BRAC's ELA Program: Overview

- I. **ELA Clubs** – established meeting place within a village [20-35 girls in each club, girls only]
- II. **Life Skills Training** – initial training of mentors and ongoing training for club members by mentors [next slide]
- III. **Financial Literacy Training** – mentors
- IV. **Livelihood Training** – six demand-driven training programs on wage employment and/or entrepreneurship [next slide]
- V. **Community Participation** – village support committees and monthly mothers' forum

VI. **Microfinance** – phased-in ~25 months from baseline [**not today**]

As of August 2011: 48,000 girls in 1285 clubs in Uganda – also in Tanzania, South Sudan

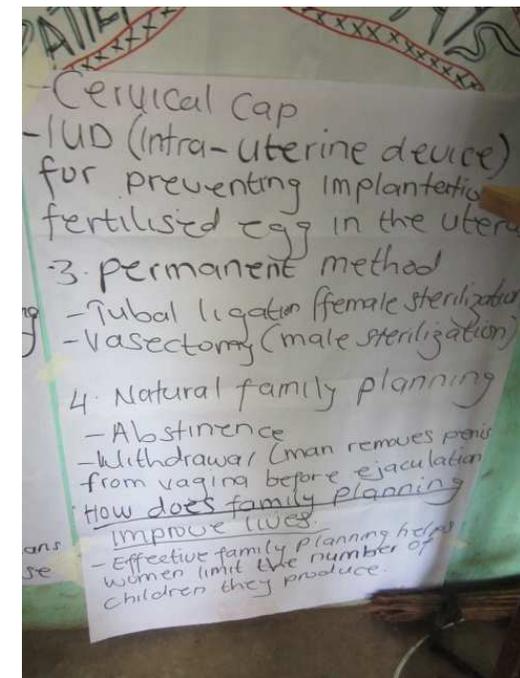
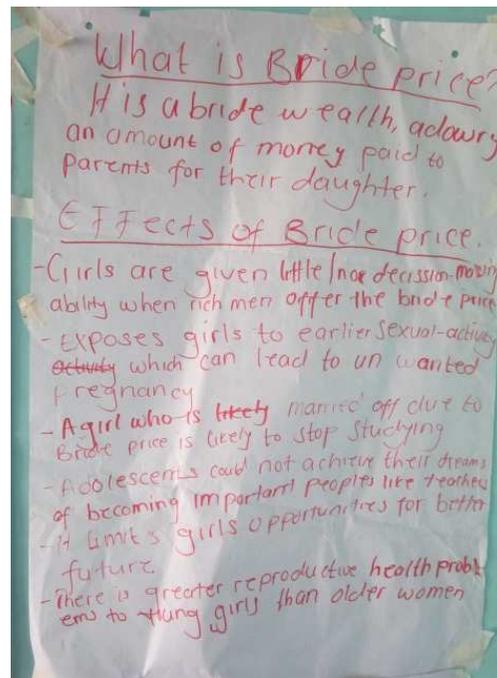
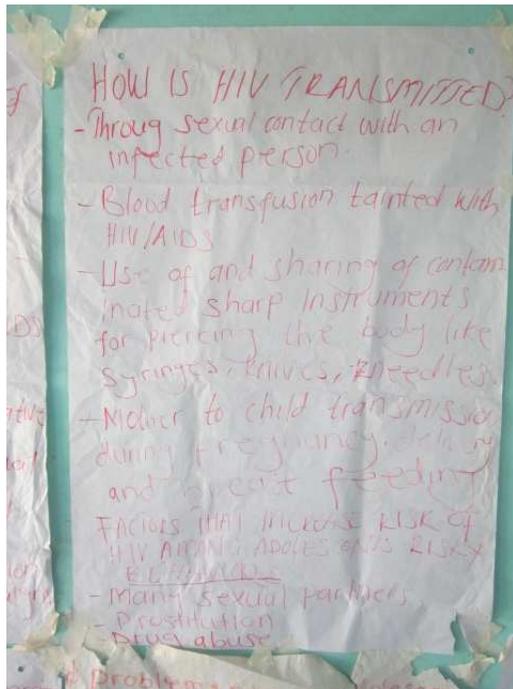
BRAC's ELA Program 1: Clubs

- **Adolescent Development Clubs** bring girls together, gives them a place to socialize, 'keeps them away from bars'
- Physical, joint space, 'owned' by the members of the club
- Open every day except Sunday, 2-6pm (after school)
- Games, songs, drama, dancing, sports, social time etc.



BRAC's ELA Program 2: Life Skills and Financial Literacy

- One girl from each ADC is selected and trained to be a mentor
- Primary responsibility is to manage the ADC activities and facilitate the **life skills and financial literacy** training courses
- Life skills training covers reproductive health, menstruation, pregnancy, STDs, HIV, family planning, rape; legal knowledge on bride price, child marriage and violence against women



BRAC's ELA Program 3: Livelihood Training

- **Livelihood training** is provided by BRAC professionals
- The following types of courses were provided:
 - (i) agriculture training on cultivating local crops;
 - (ii) vegetable cultivation;
 - (iii) poultry rearing;
 - (iv) hairdressing;
 - (v) tailoring;
 - (vi) small trade etc.
- ADCs provide diversified courses rather than training all the adolescent girls in one activity (e.g. 3 girls agriculture, 2 girls poultry, 1 girl hairdressing etc.)

BRAC's ELA Program 4: Microfinance

- Over time, **microfinance** will be phased into the ADCs [two treatments]
- In compliance with financial regulations, a lower age limit will be set for those girls eligible to receive microfinance, 16+ years (For regular BRAC microfinance, age limit is 21; plus loan ceiling potentially higher by the time she's 21)
- TODAY: I won't say anything (else) about the microfinance component, as at the time of our midline it wasn't yet offered and club members unaware of potential microfinance

Evaluation Strategy

- BRAC chose 10 branches for the ELA evaluation.
 - 5 branches in semi-urban Kampala and Mukono
 - 5 branches in rural Iganda and Jinja
 - A branch has a radius of roughly 4km (depending on population density, could be smaller)
- 15 communities in 10 branches were identified for ELA clubs
- Within each branch, 10 communities were selected to receive a club, 5 as controls

Evaluation Strategy

Date	Treatment 1 (50 communities)	Treatment 2 (50 communities)	Control (50 communities)
May 2008	<i>BASELINE SURVEY</i>		
Jun-Sep 2008	Clubs established, Life and livelihood skills training done	Clubs established, Life and livelihood skills training done	
May 2010	<i>FIRST FOLLOWUP SURVEY</i>		
Jun-Sep 2010			
May 2012	<i>SECOND FOLLOWUP SURVEY</i>		
Jun-Sep 2012	Microfinance offered	Microfinance offered	

Data

- Listing of all adolescent girls in 150 communities
- 5,966 girls (~40 per community) were surveyed at baseline – 30% of all girls in these communities
- Survey instrument:
 - Life skills: engagement in risky behaviors, HIV knowledge, self-confidence
 - Vocational skills: financial literacy, analytical ability, labor market and income-generating activities
 - Education, time use, expenditures, expectations, beliefs

Descriptives at Baseline

	Treatment (1)	Control (2)	Difference (3)	Normalized Difference (4)
Age	16.3 [2.80]	16.4 [2.96]	-.094 (.168)	-.023
Currently enrolled [yes=1]	.713 [.452]	.712 [.453]	.0008 (.028)	.001
Married [yes=1]	.053 [.224]	.073 [.260]	-.020 (.014)	-.058
Has child(ren) [yes=1]	.105 [.307]	.105 [.306]	.0002 (.018)	.0006
HIV knowledge [0-6 score]	3.82 [1.24]	3.78 [1.24]	.047 (.082)	.027
Pregnancy knowledge [yes=1]	.739 [.439]	.746 [.436]	-.006 (.027)	-.010
Has Child(ren) [yes=1]	.105 [.307]	.105 [.306]	.0002 (.018)	.0006
If sexually active, always uses condom [yes=1]	.514 [.500]	.514 [.500]	.0004 (.042)	.0006
Suffered from STD [yes=1]	.137 [.344]	.141 [.348]	-.004 (.017)	-.009
If suffered from STD, went to health center [yes=1]	.683 [.466]	.674 [.470]	.009 (.057)	.013
Had sex unwillingly in the past year [yes=1]	.205 [.404]	.142 [.350]	.062*** (.024)	.117

Descriptives at Baseline (ctd.)

	Treatment	Control	Difference	Normalized Difference
	(1)	(2)	(3)	(4)
<u>C. Income Generating Activities (IGA)</u>				
Entrepreneurial ability [0-100 score]	69.6 [24.6]	71.6 [25.0]	-1.94 (1.78)	-.055
Self-employment [yes=1]	.070 [.255]	.060 [.237]	.010 (.010)	.029
Wage employment [yes=1]	.057 [.233]	.036 [.186]	.021** (.010)	.071
Individual income from self-employment in the past year [in UGX]	19,665 [185,536]	13,099 [98,101]	6,567 (4,785)	.031
Individual income from wage employment in the past year [in UGX]	22,768 [245,364]	10,197 [76,387]	12,572** (5,360)	.049
Hours spent on self-employment on a typical day	.483 [2.06]	.426 [1.95]	.057 (.076)	.020
Hours spent on wage employment on a typical day	.704 [2.67]	.493 [2.24]	.211* (.117)	.060

Notes: *** denotes significance at 1%, ** at 5%, and * at 10%. The standard errors on the differences are estimated from running the corresponding least squares regression allowing for the errors to be clustered by community. The normalized difference is computed following Imbens and Wooldridge (2009). The entrepreneurial ability index is the cumulative and rescaled score aggregating the self-assessed ranks to the following activities (where 10 was the highest rank and 1 the lowest): "Run your own business", "Identify business opportunities to start up new business", "Obtain credit to start up new business or expand existing business", "Save in order to invest in future business opportunities", "Make sure that your employees get the work done properly", "Manage financial accounts", "Bargain to obtain cheap prices when you are buying anything for business (inputs)", "Bargain to obtain high prices when you are selling anything for business (outputs)", "Protect your business assets from harm by others", "Collecting the money someone owes you". The top 1% outliers of the income variables have been removed. The HIV knowledge index is based on the number of statements correctly identified as true or false. The relevant statements are "A person who has HIV is different from a person who is ill with AIDS", "During vaginal sex, it is easier for a woman to receive the HIV virus than for a man", "Pulling out the penis before a man climaxes keeps a women from getting HIV during sex", "A women cannot get HIV if she has sex during her period", "Taking a test for HIV one week after having sex will tell a person if she or he has HIV." and "A Pregnant woman with HIV can give the virus to her unborn baby". The pregnancy knowledge indicator is defined equivalently on a single statement "A women cannot become pregnant at first intercourse or with occasional sexual relations". All monetary variables are deflated and expressed in terms of the price level in January 2008 using the monthly consumer price index published by the Uganda Bureau of Statistics

Estimation

ITT:

– Diff-in-diff:

$$y_{ijt} = \alpha + X_{ijt_0} \beta + time_t \tau + treat_j \gamma + (time_t * treat_j) \delta + \varepsilon_{ijt}$$

– First Difference:

$$y_{ijt_1} - y_{ijt_0} = \tau + X_{ijt_0} \pi + treat_j \delta + \varepsilon_{ijt_1} - \varepsilon_{ijt_0}$$

IV:

$$y_{ijt_1} - y_{ijt_0} = \tau + X_{ijt_0} \pi + part_{ijt_1} \delta + \varepsilon_{ijt_1} - \varepsilon_{ijt_0}$$

where $part_{ijt_1}$ is instrumented with $treat_j$

Health Knowledge & Behaviors And Agency

Outcome	Baseline Levels	ITT Estimates		
		(1) OLS, Level	(2) OLS, FD	(3) Probit, Marginal Effects
HIV knowledge [0-6 score]	3.83 [1.23]	.462*** (.109)	.418*** (.069)	
Pregnancy knowledge [yes=1]	.739 [.439]	.067** (.030)	.061** (.028)	.071** (.032)
Has child(ren) [yes=1]	.104 [.305]	-.027** (.013)	-.028** (.012)	-.024** (.011)
If sexually active, always uses condom [yes=1]	.457 [.499]	.125** (.055)	.144*** (.050)	.135** (.059)
If sexually active, uses often or sometimes condom [yes=1]	.262 [.440]	-.112** (.053)	-.124** (.049)	-.117** (.054)
If sexually active, uses other contraceptives [yes=1]	.183 [.387]	.054 (.060)	.042 (.041)	.057 (.059)
Suffered from STD [yes=1]	.140 [.347]	-.003 (.026)	-.007 (.022)	-.004 (.026)
If suffered from STD, went to health center [yes=1]	.714 [.454]	.044 (.113)	.107 (.102)	.026 (.121)
Had sex unwillingly [yes=1]	.212 [.409]	-.161*** (.041)	-.160*** (.039)	-.160*** (.040)

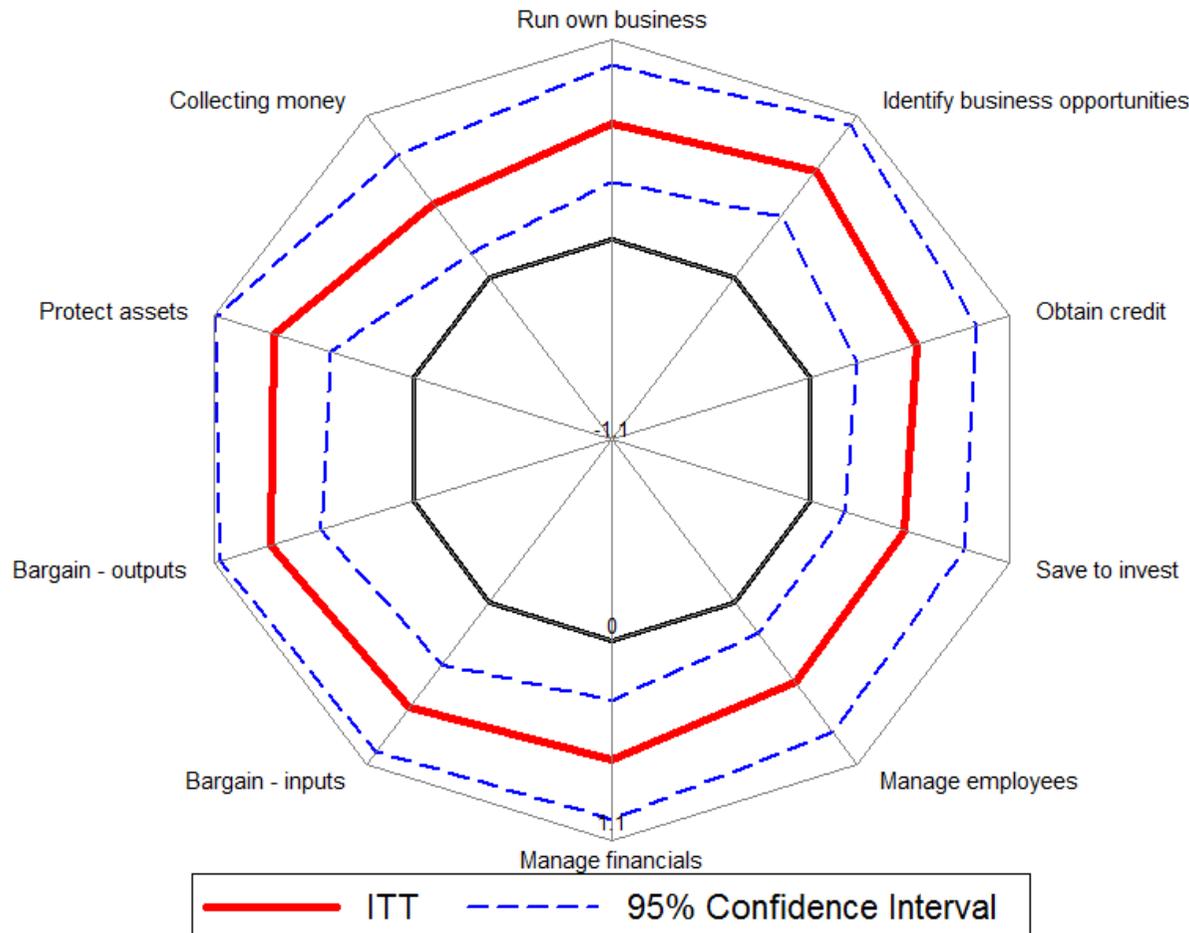
Impact of ELA Program on Income Generating Activities

Outcome	ITT Estimates					
	Baseline Levels	(1) OLS, Level	(2) OLS, FD	(3) Probit, Marginal Effects	(4) Tobit [Pr(y*>0)]	(5) Tobit [E[y* y*>0]]
Entrepreneurial ability [0-100 score]	69.7 [24.5]	7.77** (3.17)	7.22*** (1.56)			
Engaged in any IGA [yes=1]	.124 [.330]	.040* (.021)	.043** (.020)			
Self-employment [yes=1]	.070 [.255]	.050*** (.015)	.053*** (.015)	.051*** (.014)		
Wage employment [yes=1]	.057 [.231]	-.013 (.013)	-.011 (.010)	-.010 (.010)		
Individual total income past year from self-employment [in UGX]	19,312 [185,563]	-503 (11,620)	-2,915 (11,128)		.042*** (.011)	54,503*** (17,838)
Individual total income past year from wage employment [in UGX]	22,376 [244,837]	-8,837 (8,896)	-7,055 (7,528)		-.004 (.007)	-18,341 (23,021)
Hours spent on self-employment on a typical day	.478 [2.04]	.196 (.121)	.185 (.117)		.042*** (.014)	.460** (.202)
Hours spent on wage employment on a typical day	.703 [2.66]	-.192 (.137)	-.131 (.111)		-.016 (.011)	-.385 (.299)
Expenditure on goods in the last month [in UGX]	12,327 [18,904]	4,238*** (1,515)	3,741*** (1,195)		.078*** (.026)	3,155*** (895)

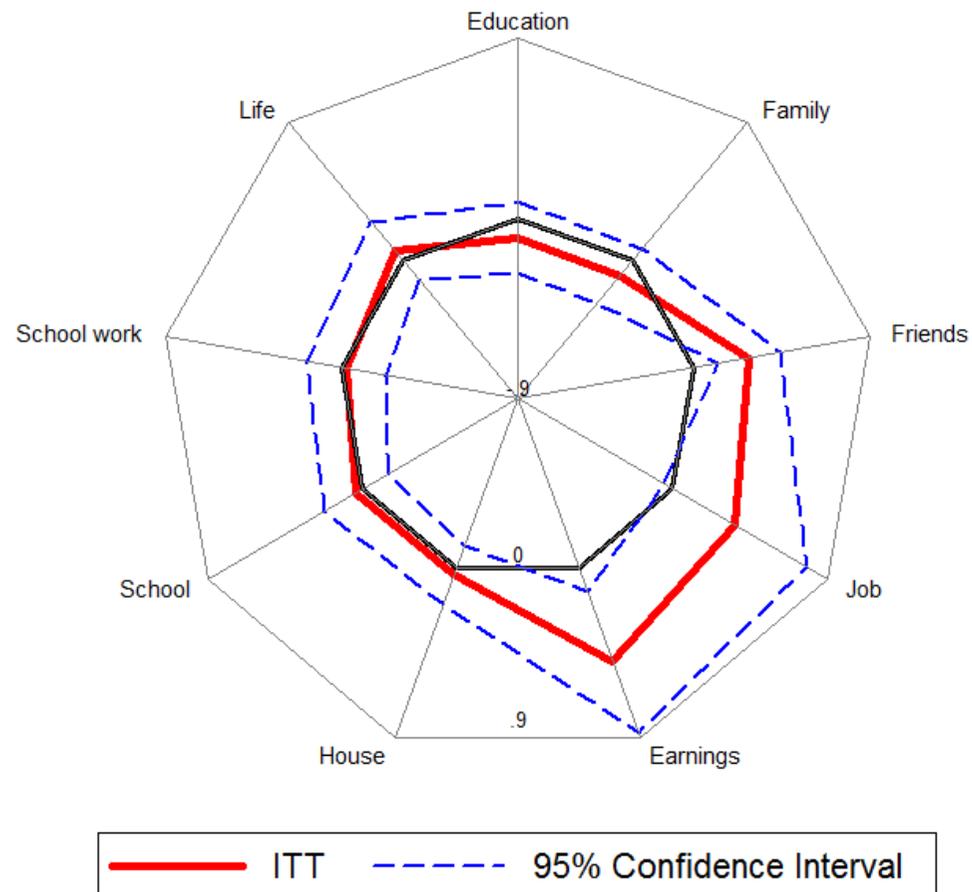
Impact of ELA Program on Schooling Outcomes

Outcome	Baseline Levels	ITT Estimates		
		(1) OLS, Level	(2) OLS, FD	(3) Probit, Marginal Effects
Currently enrolled [yes=1]	.716 [.451]	-.013 (.025)	-.006 (.021)	-.014 (.029)
If enrolled, hours spent on going to and attending school, homework and study per week	62.3 [18.1]	.855 (2.65)	-.170 (1.39)	
If dropped out, plan to start/go back to school [yes=1]	.515 [.500]	.081 (.051)	.111** (.047)	.083 (.052)

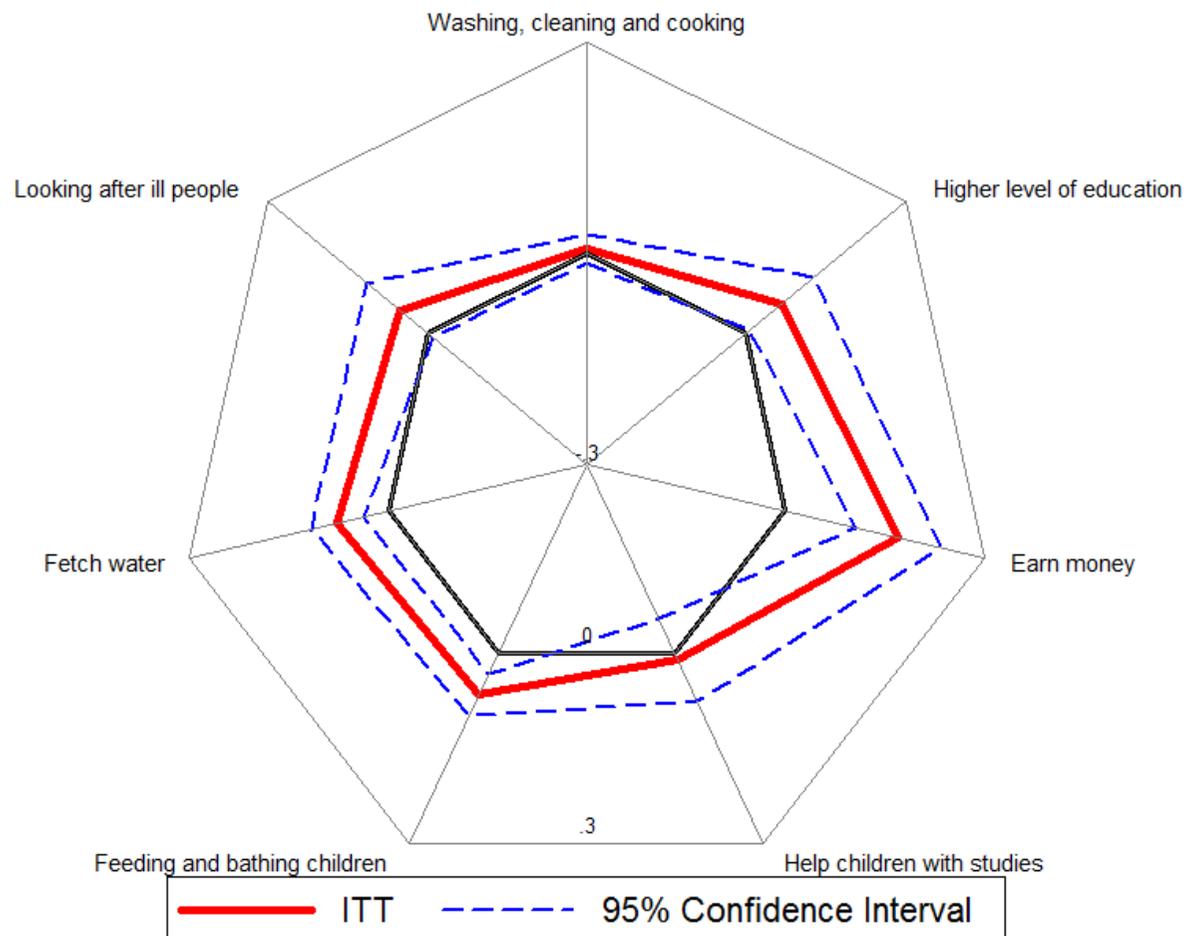
Impact on Entrepreneurship Skills



Impact on Satisfaction



Impact on Empowerment



Aspirations: Part I

		Baseline Levels	N	ITT Estimates		
				(1) OLS, Level	(2) OLS, FD	(3) Probit, Marginal Effects
A. <u>Marriage</u>	Own marriage: Anticipated age at marriage (measured at follow-up only)	25.1	3,024	.943***		
	Own marriage: Person who will choose husband [self=1]	.871	4,027	-.114***	-.113***	-.114***
	Own marriage: Person who will choose husband [self with parents=1]	.076	4,027	.101***	.098***	.101***
	Suitable age for marriage for a female	24.0	4,730	.733**	.653***	
	Suitable age for marriage for a male	27.9	4,705	.910***	.821***	
	Whether there are any advantages of early marriage [yes=1]	.245	4,653	-.052	-.064***	-.052
	Preferred person to choose husband [self=1]	.882	4,713	-.074***	-.074***	-.074***
	Preferred person to choose husband [self with parents=1]	.066	4,713	.060***	.057***	.059***

Aspirations: Part II

		Baseline Levels	N	ITT Estimates		
				(1) OLS, Level	(2) OLS, FD	(3) Probit, Marginal Effects
<u>B. Child Bearing</u>	Suitable age for women to have the first baby	24.0	4,701	.443	.437**	
	Preferred number of children	4.22	4,700	-.368***	-.382***	
	Preferred gender ratio (preferred number of boys / preferred number of children)	.481	4,647	.016***	.018***	
<u>C. Children's Lives</u>	Preferred age at which daughter(s) get married	25.0	4,603	.587***	.511***	
	Preferred age at which son(s) get married	28.5	4,504	.034	-.039	
	Comparison of daughters' future to own [better=1]	.945	4,183	.083***	.083***	.087***
	Comparison of sons' future to own [better=1]	.955	4,175	.076***	.075***	.079***

Impact heterogeneity?

- We test for heterogeneity of the results along the following dimensions:
 - Rural/urban
 - household wealth (above/below median)
 - Age (below-16 vs above-16)
- Results don't seem to be driven by any subgroup along any of these dimensions
 - Note: somewhat higher impact for girls from poorer hh's, suggests the program may lead to reduced inequality in the long-run

Cost-Benefit Analysis of the ELA Program

- Total cost of the program is \$366K in year 1, \$232 in year 2 [set-up costs are sunk]
- Cost per potential beneficiary [relevant group for our ITT analysis] is \$17.9 in year 2
- Corresponds to
 - .54% of hh income at baseline
 - 21% of annual pce of an adolescent girl on sub-set of goods we asked them about
- Weigh this against reduction in fertility (-26%), inc in employment (+32%) and drop in sex against her will (-76%)

Cost-Benefit Analysis of the ELA Program

- How does this compare to other programs?
 - Jovenes in Colombia [Attanasio et al 2011]: similar benefit 22% rise in earnings, but costs much higher (\$600-\$2000 per beneficiary) and links workers to firms in formal sector (harder to do in SSA)
 - YOP in Northern Uganda [Blattman et al 2011]: 35% return to unconditional transfers of \$374 per person on average. Note the different target group: men and women, aged 16-35

Conclusion

- We evaluate BRAC's ELA program that combines peer-training on HIV awareness and reproductive health with vocational skills training in Uganda
- Summary of findings: Program leads to
 - Higher HIV knowledge, condom use, lower fertility rates
 - Higher labor force participation, self-employment and consumption
 - Lower desired fertility and early-marriage (both for self and children)
 - No impact on schooling
- Findings suggest combining life skills and vocational skills training with voluntary club participation works well in this context.

Conclusion

- Targeting informational and skills constraints *simultaneously* may work to improve adolescent girls' lives in the long run.
- External validity currently being researched as ELA-style programs have been rolled out across SSA.
- Some questions for further research:
 - Long-run impacts: 4 year results coming soon
 - Microfinance?
 - Are the results due to
 - complementarity between the two types of training,
 - method of delivery: in-class vs clubs?