

Economic Empowerment of Female Adolescents: Evidence from Uganda

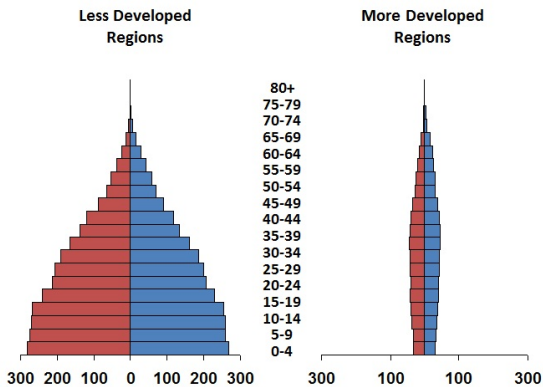
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Background: Adolescents in Developing Countries

- ▶ There are more than 2 billion young people below age 20 in less developed regions
- ▶ Almost one-third of the population in less developed countries is under age 15



Source: United Nations, *World Population Prospects: The 2004 Revision*, 2005.

Adolescents in Developing Countries ctd.

- ▶ In particular, African countries have a younger population relative to the rest of the world

Table 1: Population Statistics By Selected Countries and Year

	2000			2010		
	Total Population	Number Under 15	% Under 15	Total Population	Number Under 15	% Under 15
World	6,079,727,906	1,818,772,345	29.9	6,823,153,417	1,824,307,868	30
Bangladesh	129,194,224	46,974,029	36.4	150,392,397	44,550,288	34.5
Kenya	30,339,770	12,985,458	42.8	33,068,248	11,517,416	38
Tanzania	35,306,126	15,853,895	44.9	44,957,030	19,280,445	54.6
Uganda	23,317,560	11,923,399	51.1	31,395,362	15,381,394	66
United States	275,562,673	58,554,755	21.2	300,118,269	59,444,392	21.6

Challenges Facing Adolescent Girls

- ▶ disproportionately responsible for domestic duties, including childcare (their own and their siblings)
- ▶ norms that hinder mobility and the ability to take a job
- ▶ with certain notable exceptions, employer bias towards hiring male employees (De Mel et al. (2010))
- ▶ poor access to credit markets and narrower information networks
- ▶ hence policies targeted towards adolescent girls today might have far reaching effects on society in the future

This paper

- ▶ Evaluate BRAC's Empowerment and Livelihood for Adolescents (ELA) Program in Uganda and Tanzania
- ▶ Questions:
 - ▶ What is the impact of the program on participating girls' welfare (skills, occupations and income, risky behaviours), expectations and social networks?
 - ▶ What is the role of training as opposed to training + microfinance?
 - ▶ Are there any spillover effects on non-participant girls/boys?
 - ▶ Are there any effects on their parents'/guardians' expectations for their children (those who participate vs those who do not)?
- ▶ Today: preliminary evidence on Question 1, based on data from Uganda

Empowerment and Livelihood for Adolescents (ELA)

1. **Clubs** - adolescent development clubs (ADCs) for 20-35 girls aged 14 to 20 (typically one club per village)
2. **Life Skills Training:** provided by mentors: two girls from each ADC are selected and trained to be mentors
 - ▶ topics covered include HIV/AIDS awareness, contraception, pregnancy, gender and bride price, rape and legal rights, leadership among adolescents
3. **Livelihood Training:** provided by BRAC professionals
 - ▶ livelihood courses provided
 - ▶ agriculture training on cultivating local crops
 - ▶ vegetable cultivation
 - ▶ poultry rearing
 - ▶ poultry and livestock vaccinator training
 - ▶ tailoring and other non-farm businesses
 - ▶ community health worker training
4. **Microfinance:** over time, microfinance will be phased into the ADCs. Only girls older than 18 may participate in microfinance (legal restriction)

Evaluation Design

- ▶ Randomization into treatment and control at the village level (150 villages)
- ▶ Two types of treatments:
 - ▶ T1 (50 villages): ADC + Training
 - ▶ T2 (50 villages): ADC + Training + Microfinance

Table 1: Evaluation Design and Timing

Date	T1	T2	C
May 2008	<i>BASELINE SURVEY</i>		
June-Sep 2008	Clubs established	Clubs established	
May 2010	<i>FIRST FOLLOW-UP SURVEY</i>		
June-July 2010	Microfinance offered		
May 2011	<i>SECOND FOLLOW-UP SURVEY</i>		
June 2011		Microfinance offered	Clubs established

Sample Selection

- ▶ Pre-randomization: a full list of potential beneficiaries in each village identified by BRAC field officers
- ▶ Both Girls enrolled full-time in school and those that have dropped out
- ▶ Post-randomization: our survey instruments are fielded in treatment and control villages to 40 randomly selected potential beneficiaries and their household heads (5,966 respondents interviewed)
- ▶ Concomitantly, in treated villages BRAC advertises the program door-to-door promotion and girls choose to participate or not
- ▶ The follow-up questionnaire was administered about 24 months after baseline data collection (4,888 respondents re-interviewed)

Basic Socio-Economic Characteristics at Baseline

		Treatment	Control	Difference
<u>Demographics</u>	Age (years)	16.2	16.3	-.098 (.183)
	Never married [yes=1]	.893	.867	.026 (.018)
	Has child(ren) [yes=1]	.105	.105	.0002 (.018)
<u>Education & IGA</u>	Enrolled in school [yes=1]	.713	.712	.0008 (.028)
	For drop-outs, years of completed schooling	8.12	8.25	-.127 (.212)
	For non-enrolled, engaged in any IGA [yes=1]	.308	.266	.043 (.037)
	For non-enrolled, self-employed [yes=1]	.160	.156	.005 (.024)
<u>Risky Behaviors</u>	Ever had sexual intercourse [yes=1]	.322	.331	-.009 (.023)
	If sexually active, always uses Condom [yes=1]	.514	.514	.0004 (.042)
	Ever suffered from an STD [yes=1]	.137	.141	-.004 (.017)

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 village.

Identification

- ▶ **Intention to Treat (ITT):** To identify the effect of the program on girls in treated villages, we compare the outcomes of interest among sampled girls in treatment villages to those in control villages, controlling for baseline differences.
- ▶ Around 21% of sampled girls in treated villages participate in the clubs.
- ▶ **Average Treatment effect on the Treated (ATT):** To identify the average treatment effect on girls who actually participate in the clubs, we instrument for participation status of the sampled girls with whether they live in a treatment village.

Education

- ▶ Program did not have a significant impact on enrollment rates
- ▶ Those who were not enrolled are 11% more likely to intend to go back to school

	Currently enrolled [yes=1]	Years of education completed	If enrolled, Hours spent on study/school per week	If not enrolled, going back [at least maybe=1]
ITT	-.017 (.023)	-.076 (.113)	1.69 (2.62)	.112** (.044)
Treatment	-.016 (.015)	.142 (.094)	.968 (1.64)	-.039 (.039)
Time	.052*** (.018)	.836*** (.100)	-1.72 (2.21)	-.099*** (.033)
Observations	9,388	9,183	6,242	2,760
R-squared	.311	.321	.051	.052
Controls	Yes	Yes	Yes	Yes
Branch Dummies	Yes	Yes	Yes	Yes

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 village.

Life Skills

- ▶ HIV knowledge improves by 11% relative to its baseline level among girls in treated villages
- ▶ Girls in treated villages are 7% more likely to know about pregnancy risk and 21% more likely to use a condom during sex

	HIV Knowledge [scale 0,6]	Pregnancy Knowledge [yes=1]
ITT	.370*** (.102)	.066** (.030)
Treatment	.043 (.058)	-.015 (.020)
Time	-.440*** (.081)	-.069*** (.025)
Observations	9,388	9,150
R-squared	.057	.045
Controls	Yes	Yes
Branch Dummies	Yes	Yes

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 village.

Health & Reproductive Outcomes

- ▶ Girls in treated villages are 14% less likely to have had sex unwillingly and 4% less likely to have children.
- ▶ They are equally likely to have had an STD but those who have are 14% more likely to go to a health center.

	Had sex unwillingly [yes=1]	Has Child(ren) [yes=1]	Suffered from STD [yes=1]	If suffered from STD, went to Health Center [yes=1]
ITT	-.138*** (.033)	-.035*** (.012)	.0005 (.024)	.141** (.055)
Treatment	.064*** (.021)	.008 (.008)	-.007 (.014)	.042 (.047)
Time	.066** (.027)	-.016 (.011)	.044** (.019)	.018 (.046)
Observations	3,487	9,388	8,446	1,357
R-squared	.031	.342	.086	.138
Controls	Yes	Yes	Yes	Yes
Branch Dummies	Yes	Yes	Yes	Yes

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 village.

Livelihood Skills

- ▶ Self-assessed entrepreneurial ability is 10% higher among girls in treatment villages.
- ▶ Financial and analytical skills (as measured by survey questions) improve significantly among girls who participate in the program.

	Entrepreneurial Ability [scale 0,100]	Individual Entrepreneurial Ability [scale 0,50]	Social Entrepreneurial Ability [scale 0,50]	Financial Literacy [scale 0,5]	Analytical Ability [scale 0,5]
ITT	7.22** (2.81)	3.50** (1.45)	3.73*** (1.42)	-.004 (.069)	.177 (.182)
Treatment	-1.81 (1.68)	-.861 (.879)	-.953 (.845)	.131*** (.043)	.076 (.104)
Time	-16.6*** (2.31)	-7.53*** (1.19)	-9.05*** (1.16)	.760*** (.057)	1.09*** (.153)
Observations	9,388	9,388	9,388	9,388	9,388
R-squared	.139	.120	.145	.227	.191
Controls	Yes	Yes	Yes	Yes	Yes
Branch Dummies	Yes	Yes	Yes	Yes	Yes

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 village.

Income Generating Activities

- ▶ Although the microfinance component has not been introduced yet, girls in treated villages are 4% more likely to be engaged in an income generating activity, and 5% more likely to be self-employed.
- ▶ They spend 16% more time working outside the house.

	Engaged in any IGA [yes=1]	Self-Employment [yes=1]	Employment [yes=1]	Any future IGA planned [yes=1]
ITT	.040** (.020)	.053*** (.014)	-.014 (.012)	.016 (.024)
Treatment	.025** (.012)	.007 (.008)	.018** (.009)	.038*** (.014)
Time	.020 (.014)	.020* (.011)	-.0005 (.009)	.031 (.020)
Observations	9,388	9,388	9,388	8,751
R-squared	.210	.128	.087	.154
Controls	Yes	Yes	Yes	Yes
Branch Dummies	Yes	Yes	Yes	Yes

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 village.

Savings and Credit

- ▶ Girls in treated villages are 12% more likely to have savings.
- ▶ On the intensive margin, their savings are 17% higher relative to baseline.
- ▶ Although the microfinance component has not been introduced yet, they are 3% more likely to have a loan.

	Any Savings [yes=1]	Total Savings Amount (dTobit)	Any Savings at Bank [yes=1]
ITT	.121*** (.031)	10,425*** (4,030)	.123*** (.025)
Treatment	.006 (.018)	1,820 (2,406)	-.013 (.016)
Time	.012 (.024)	3,113 (2,841)	.003 (.020)
Observations	9,388	9,388	2,734
R-squared	.189	.018	.066
Controls	Yes	Yes	Yes
Branch Dummies	Yes	Yes	Yes

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 village.

Discussion

- ▶ Recent years have seen an upsurge of programs targeted to adolescents, aiming to improve their welfare through training, credit and complementary services
- ▶ We provide evidence from the first rigorous evaluation of such a program that targets adolescent girls (aged 14-20) in Uganda
- ▶ Our findings suggest that 2 years after the inception of the program (before the introduction of the credit component), girls that received the program:
 - ▶ have better knowledge of HIV and contraception
 - ▶ engaged less in risky behaviors
 - ▶ have better financial and analytical skills, and more confidence in their entrepreneurial capacity
 - ▶ are likely to start running their own businesses and saving money
- ▶ Future work on
 - ▶ effects on the girls' families (parents, siblings)
 - ▶ the role of credit in improving the socio-economic lives of the girls further
 - ▶ long-run effects

Appendix

Estimation Strategy

- ▶ To identify the ITT (intention to treat) effect we estimate

$$y_{ijkt} = \sum_{k=1}^{10} br_k + X_{ijkt}\gamma + treat_j\beta_1 + time_t\beta_2 + treat_j \times time_t\beta_3 + \varepsilon_{ijkt}$$

y_{ijt} is the level of an outcome variable for individual i in village j measured at t
 $treat_j$ equals 1 if village j is part of a treatment group and 0 otherwise
 $time_t$ equals 1 if the observation stems from follow-up and 0 otherwise
 X_{ijkt} contains the age & dummies for being enrolled, being married and having a child

br_k are branch dummies

- ▶ To identify the ATT (average treatment on the treated) effect we estimate

$$y_{ijkt_1} = \sum_{k=1}^{10} br_k + X_{ijkt_0}\gamma + part_{it_1}\beta + \varepsilon_{ij}$$

$part_{it_1}$ equals 1 if respondent i participates in ADP and 0 otherwise. We instrument for $part_{it_1}$ with $treat_j$

Attrition

Explanatory Variable	Panel [yes=1]			Proportion of Panel Adolescents	
	(1)	(2)	(3)	(5)	(6)
Treatment	.023 (.030)	.024 (.027)	.027 (.027)	.023 (.027)	.023 (.026)
Whether enrolled in school [yes=1]			.010 (.014)		
Adolescent is married [yes=1]			.004 (.023)		
Adolescent have a child [yes=1]			.022 (.020)		
Finance skills [scale 0-4]			-.005 (.008)		
Analytical skills [scale 0-5]			.004 (.004)		
Self-assessed empowerment score [scale 0-100]			-.0006 (.000)		
Dissatisfaction about life as a whole [scale 1-7]			.0009 (.004)		
Hours spent on social activities			.0005 (.000)		
Constant	.804*** (.027)	.703*** (.079)	.729*** (.086)	.804*** (.022)	.704*** (.042)
Level of Aggregation	Adolescent	Adolescent	Adolescent	Village	Village
Reported Coefficient	Level	Level	Level	Level	Level
Branch Dummies	No	Yes	Yes	No	Yes
Clustered Standard Errors (Village)	Yes	Yes	Yes	No	No
N	5,966	5,966	5,966	150	150

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 village.