

*Does Education Change Political Attitudes?
Evidence from a Kenyan School Experiment*

Edward Miguel, UC Berkeley and NBER

Michael Kremer, Harvard and NBER

Rebecca Thornton, University of Michigan

Education, development, and democracy

- What impact does education have on politics?
 - Classic modernization theory (Lipset 1959) posits that wealth, education, democratization emerge together
 - Education broadens horizons beyond family / tribe, provides access to media and information, empowers people to act collectively to make demands on the state
 - Was Africa's 1990s democratization wave driven, in part, by schooling investments made a decade earlier?
- The cross-country patterns underlying modernization theory have come under attack (Acemoglu et al. 2007)

Education, development, and democracy

- At the micro-level of analysis, there is strong evidence that educated citizens are more likely to care about politics and to vote (Verba and Nie 1972)
 - Logan and Bratton (2006): large positive correlations between education, political participation in 15 Sub-Saharan African countries
 - However, with few exceptions, omitted variable bias issues are not adequately dealt with. More / less educated people could differ in many unobservable ways (e.g., personality, family background, ability)
- Milligan et al (2004) find strong positive effects of education on voting in the US but not the UK. Positive impacts on political knowledge in both countries

An education experiment in rural Kenya

- This paper exploits a randomized experiment carried out in 2001-2002 in rural western Kenya (Busia district)
 - Grade 6 girls in 34 primary schools were offered a merit scholarship if they scored well on academic exams. 35 schools were controls. (N=3200 girls)
- In the short-run, the program produced large test score gains, of 0.25 s.d.
 - Student and teacher attendance improved
- *What is the impact of this increase in human capital on political attitudes and knowledge 4-5 years later?*

Talk outline

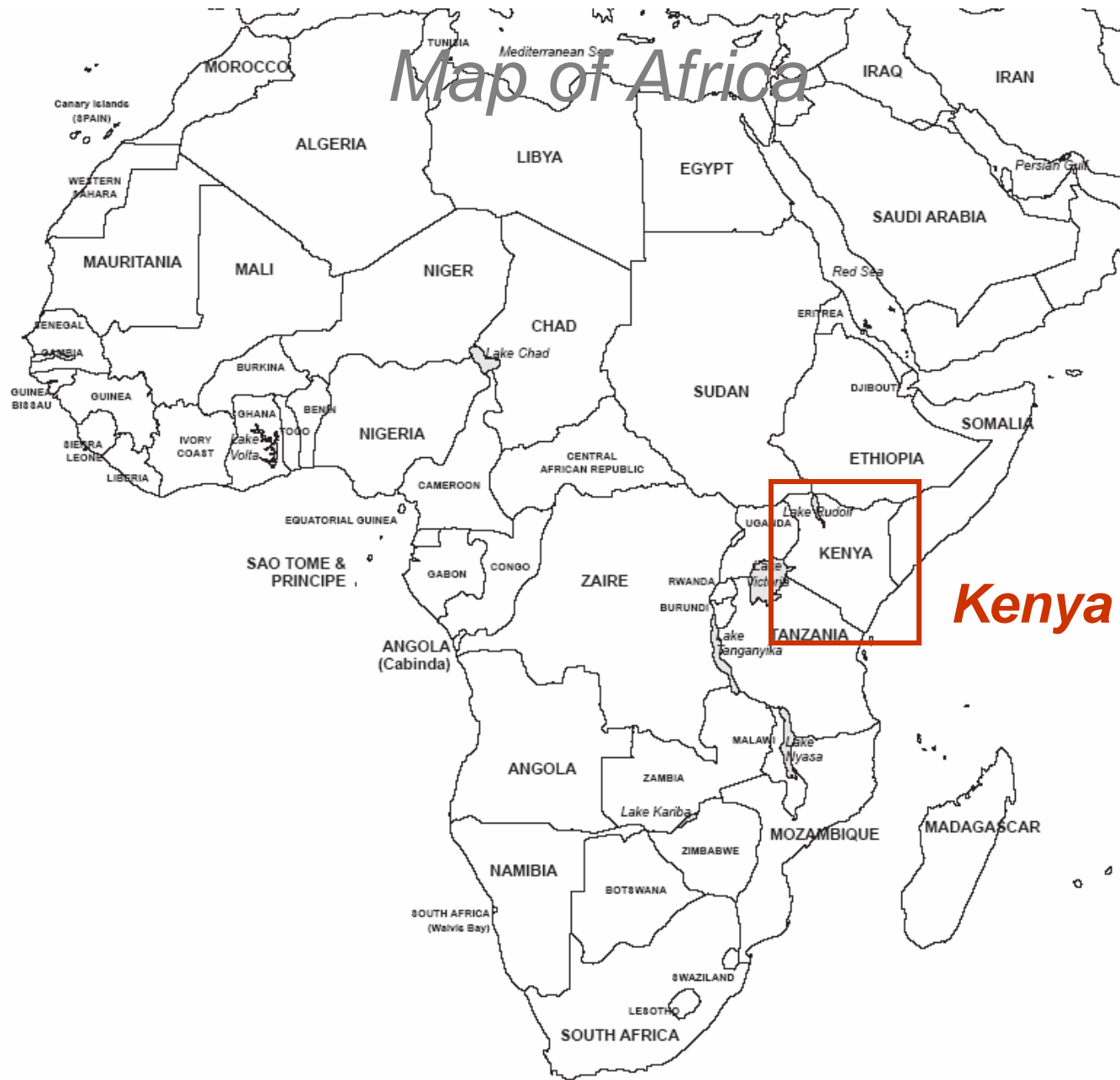
- Introduction
- The Girls Scholarship Program in Kenya
- 2001-2002 Short-run impacts (summary)

- 2005-2007 Long-run impacts on:
 - Education
 - Political attitudes, knowledge
 - Gender, ethnic and religious identity, social capital

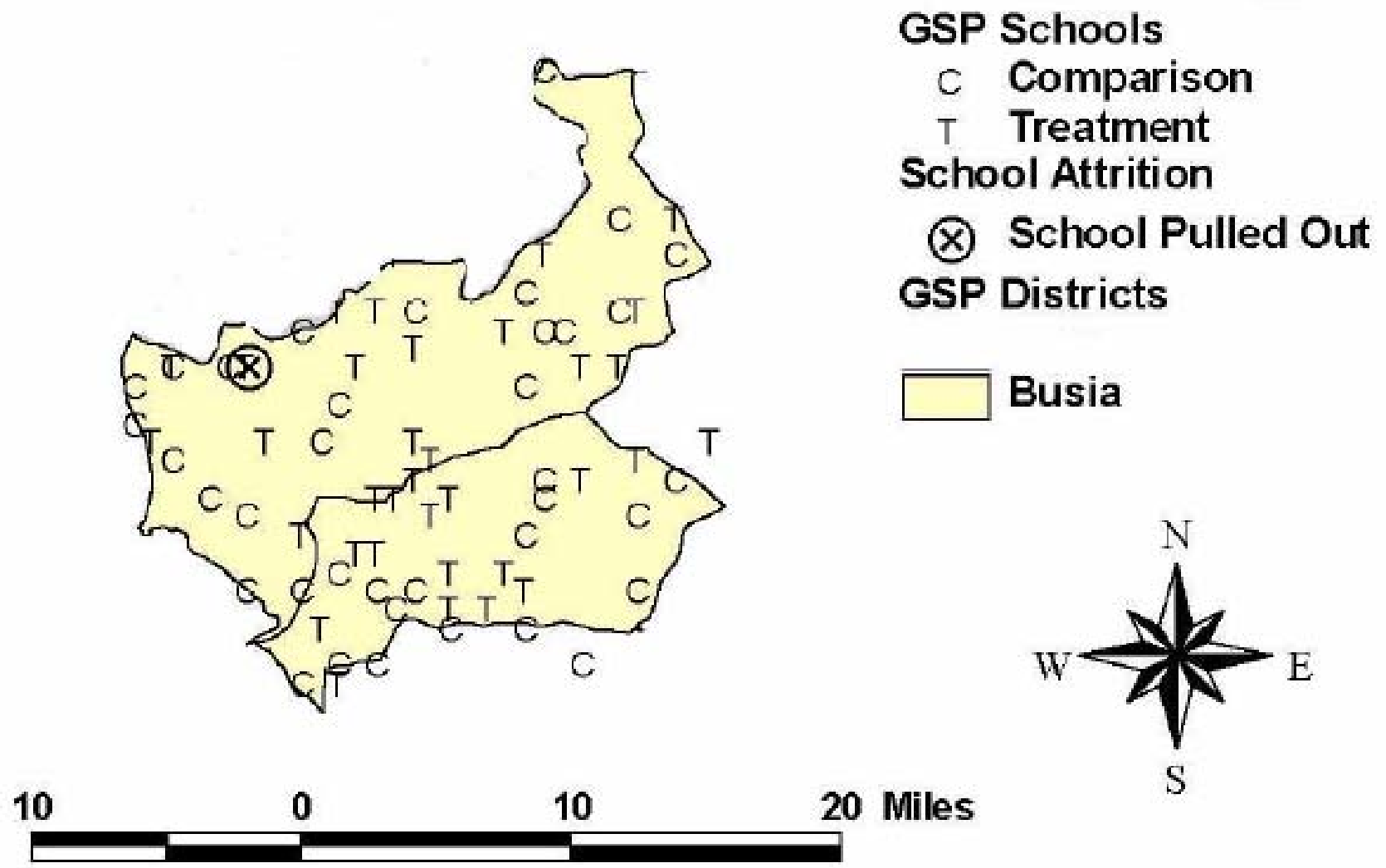
- Discussion / conclusion

The Girls Scholarship Program (GSP) in Kenya

- The top 15% (district-wide) of grade 6 girls in program schools won:
 - 500 KSh (US\$6.40) for school fees, for two years
 - 1000 KSh (US\$12.80) cash, for two years
 - Public recognition, certificate at an award ceremony
- The total cash component was US\$38, in a setting where annual per capita income is close to US\$400
 - Two cohorts competed (2001, 2002)
- Recent school incentive program evaluations in rich countries have produced mixed results (Angrist and Lavy 2002, Leuven et al 2003)







Sample attrition in the initial study

- Initially in two neighboring districts, Busia and Teso
 - Teso district has long been a difficult setting for NGO work, due to the opposition of some local leaders
 - High sample attrition rates in Teso district complicate estimation of effects there (wide treatment bounds)
 - Sample follow-up in 2001 in Busia was high at 79% (program schools) versus 78% (control), while in Teso it was low at 53% (program schools) versus 65% (control)
- The follow-up 2005-2007 survey was restricted to Busia
 - Not a problem for the current study since our focus is the impact of education, not of merit awards per se

Summary of earlier findings (Kremer et al 2008)

- The randomization “worked” at producing comparable program and control groups (Table 1)

Table 1: Respondent Baseline Characteristics Across Program and Comparison Schools
(Cohort 1 and Cohort 2, Busia District Girls)

	Program	Comparison	Difference (s.e.)
Test score 2000–baseline sample (cohort 1 only)	-0.05	-0.12	0.07 (0.18)
Test score 2000–restricted sample (cohort 1 only)	0.07	0.03	0.04 (0.19)
Student age in 2001	13.5	13.4	0.0 (0.1)
Iron roof ownership	0.77	0.77	0.00 (0.03)
Mother’s education (years)	9.2	8.8	0.4 (0.3)
Father’s education (years)	10.8	10.4	0.4 (0.4)
Proportion ethnic Teso	0.07	0.06	0.01 (0.03)

Summary of earlier findings (Kremer et al 2008)

- The randomization “worked” at producing comparable program and control groups (Table 1)
- Large test score gains for both cohorts (2001, 2002) of 0.25 standard deviations (Table 2, Figure 1)
 - We cannot reject equally large gains for girls throughout the baseline (2000) test score distribution, even at the bottom
 - Gains in teacher attendance (reducing absenteeism by one third), and also student attendance
- Test score gains persisted through 2003

Figure 1: Competition Year Test Score Distribution (Cohort 1 in 2001, Cohort 2 in 2002)
(Non-parametric kernel densities)

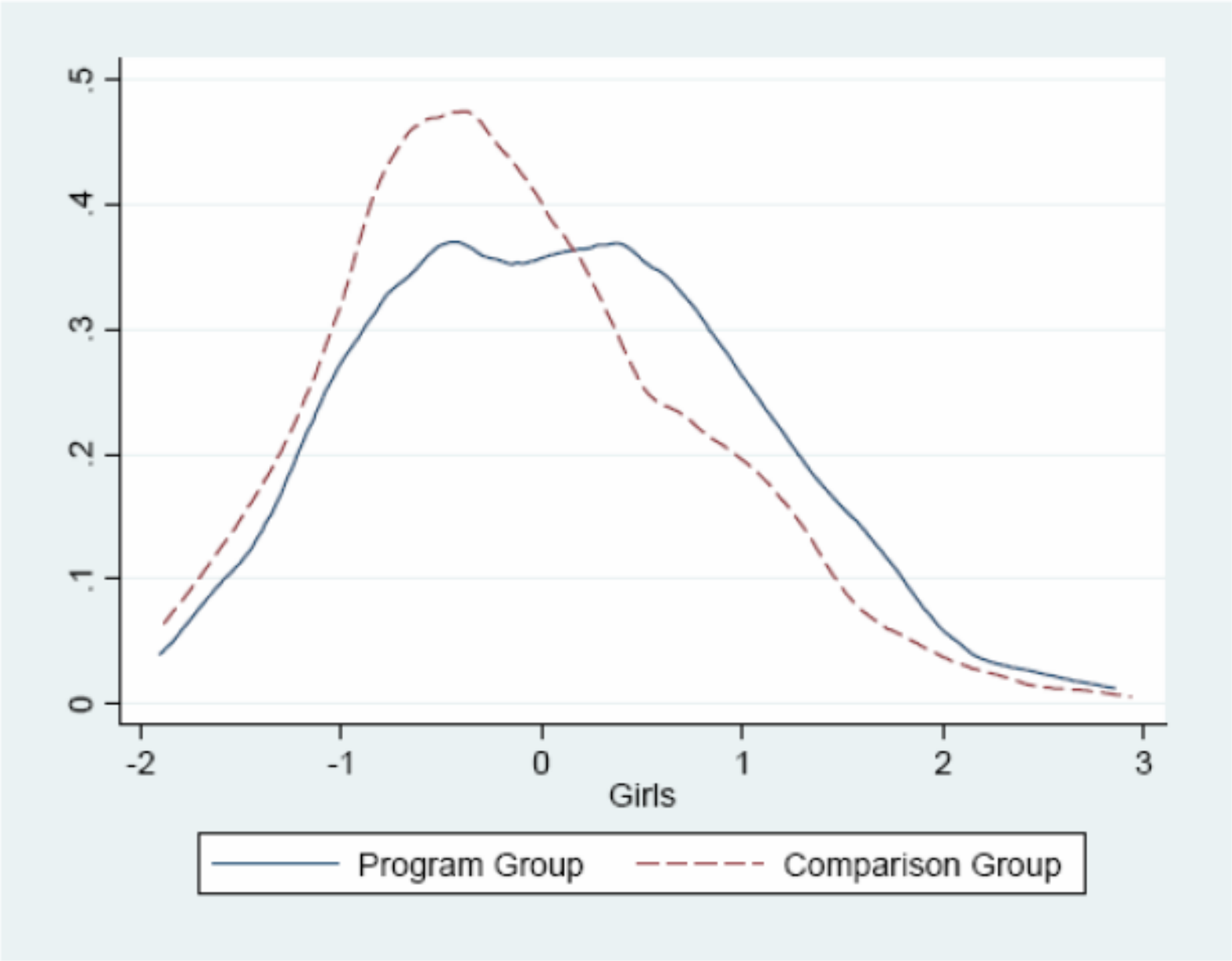


Table 2: Girls Scholarship Program Impacts in 2001-2002 (among Busia district girls)

Outcome variable	Coefficient estimate on the program indicator (s.e.)
Academic test score (normalized) – overall	0.25 ^{***} (0.08)
Academic test score (normalized) – top quartile	0.08 (0.16)
Academic test score (normalized) – second quartile	0.29 ^{***} (0.11)
Academic test score (normalized) – third quartile	0.19 [*] (0.13)
Academic test score (normalized) – bottom quartile	0.23 (0.30)
Average student school participation / attendance	0.032 [*] (0.018)
Average teacher attendance	0.070 ^{***} (0.024)

The 2005-2007 Tracking Survey

- A panel dataset of rural Kenyan young adults (2001-07)
 - Individuals were “tracked” as they moved throughout Kenya and even into Uganda
 - Direct contact with 84.3% of target respondents: 81.9% actually surveyed; the rest were dead or refused
 - Balance across program (81.7%) and control (82.1%) group individuals
 - Two step procedure: “regular tracking”, and “intensive tracking” (follow-up a representative sub-sample)

The 2005-2007 Tracking Survey

- Life outcomes: educational attainment, demographic information (marriage, fertility, migration), labor market
- Cognitive tests were administered in: arithmetic, reading, vocabulary (English, Swahili), spatial reasoning (Ravens matrix)
- Adapted from AfroBarometer, World Values Survey:
 - Political knowledge (officials' names), interest
 - Attitudes: democracy, government, voting, violence
 - Gender, ethnic and religious identity, "social capital"

Tracking Survey questions

- Some sample questions:

Political knowledge

“Do you know who Kenya’s current Minister of Health is?”

Democratic attitudes and participation

“We should choose our leaders in this country through regular, open and honest elections.” (1=Strongly agree ... 5=Strongly disagree)

Do you intend to vote in the next presidential election, to be held in 2007?

Satisfaction / Skepticism

“Overall, how satisfied are you with the way democracy works in Kenya?” (1=Very satisfied ... 4=Not at all)

Tracking Survey questions

Women's rights

A. Women have always been subject to traditional laws and customs, and should remain so.

B. In our country, women should have equal rights and receive the same treatment as men do.

1=Agree Very Strongly With A ... 4=Agree Very Strongly With B

Ethnic identity

"Is your ethnic or tribal origin somewhat important, very important or not very important to your life?"

Social Capital

"In general, can you trust people in other tribes?"

"Are you a member of a women's group?"

Education and SES impacts

- Test score gains are persistent to 2005-2007 (Table 3)
 - The estimated effect across all tests is 0.17 s.d.
 - Roughly equivalent to 0.17 more years of schooling
- Program school individuals are significantly more likely to be enrolled in school (18% increase), and to have completed some secondary school (23% increase)
 - No detectable impacts on marriage, migration, happiness, or anthropometrics

Table 3: Educational and Socioeconomic Outcomes – Program Impacts and Summary Statistics
(Cohort 1 and Cohort 2, Busia District girls)

Outcome variable	Coefficient estimate on program indicator – OLS (s.e.)	Comparison group variable mean (s.d.)
<i>Test scores</i>		
Test score – all subjects (average of English vocabulary, Swahili vocabulary, reading, arithmetic, Raven’s matrix), normalized	0.174** (0.067)	-0.09 (1.05)
Arithmetic test (normalized)	0.178** (0.082)	-0.15 (1.03)
English vocabulary test (normalized)	0.128* (0.066)	-0.07 (1.06)
Raven’s matrix test (normalized)	0.146** (0.060)	-0.05 (0.98)
Reading test (normalized)	0.067 (0.063)	-0.01 (1.05)
Swahili vocabulary test (normalized)	0.146** (0.068)	-0.09 (1.00)
<i>Schooling</i>		
Still in school, at time of survey (0-1)	0.092** (0.040)	0.49 (0.50)
Attended at least some secondary school (0-1)	0.068** (0.032)	0.30 (0.46)
Grades of school completed	0.095 (0.079)	7.7 (1.3)
<i>Socioeconomic and demographic outcomes</i>		
Ever married (0-1)	-0.023 (0.029)	0.224 (0.417)
Ever pregnant (0-1)	-0.020 (0.032)	0.286 (0.452)

Impacts on political variables

- More informed: better political knowledge (Table 4)
- More skeptical: Less satisfaction with Kenya's democracy, less respect for authority, more likely to condone violence, and less optimistic about the quality of government
- No impact on support for democratic institutions
 - Contrast large positive effects in OLS cross-section
 - No effect on stated 2007 voting intentions
 - No effects on support for women's rights, ethnic identification, trust, community groups (Table 5)

Table 4: Political Knowledge and Attitudes – Program Impacts and Summary Statistics
(Cohort 1 and Cohort 2, Busia District girls)

Outcome variable	Coefficient estimate on program indicator – OLS (s.e.)	Coefficient estimate on normalized test score across all subjects – IV-2SLS (s.e.)	Comparison group variable mean (s.d.)
<i>Political knowledge and interest</i>			
Knowledge of politician names (0 to 6)	0.045** (0.019)	0.263** (0.101)	0.592 (0.238)
Interested in public affairs (0-1)	-0.037 (0.024)	-0.209 (0.160)	0.27 (0.44)
Days read a newspaper in last week (0 to 7)	0.082 (0.076)	0.48 (0.40)	0.47 (1.07)
Days listened to radio in last week (0 to 7)	-0.44** (0.18)	-2.53* (1.37)	3.60 (2.89)
<i>Democratic attitudes and participation</i>			
Democratic values index (0 to 1)	0.004 (0.012)	0.021 (0.063)	0.473 (0.176)
“We should choose our leaders in this country through regular, open, and honest elections.” (0 to 1)	-0.003 (0.012)	-0.020 (0.073)	0.936 (0.187)
“Democracy is preferable to any other kind of government” (0-1) (versus “In some circumstances, a non-democratic government can be preferable”, or “For someone like me, it doesn’t matter what kind of government we have.”)	-0.002 (0.032)	-0.009 (0.183)	0.696 (0.460)
“Only those who are sufficiently well educated should be allowed to choose our leaders.” (0 to 1) (versus “All people should be permitted to vote, even if they do not fully understand all the issues in an election.”)	0.012 (0.032)	0.069 (0.191)	0.278 (0.379)
Respondent intends to vote in the next presidential election (0-1)	-0.031 (0.037)	-0.135 (0.155)	0.506 (0.500)

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Knowledge of politician names (0 to 6)	0.045** (0.019)	0.263** (0.101)	0.106*** (0.007)	0.592 (0.238)
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<i>Democratic attitudes and participation</i>				
Democratic values index (0 to 1)	0.004 (0.012)	0.021 (0.063)	0.052*** (0.006)	0.473 (0.176)
“We should choose our leaders in this country through regular, open, and honest elections.” (0 to 1)	-0.003 (0.012)	-0.020 (0.073)	0.015** (0.006)	0.936 (0.187)
“Democracy is preferable to any other kind of government” (0-1) (versus “In some circumstances, a non-democratic government can be preferable”, or “For someone like me, it doesn’t matter what kind of government we have.”)	-0.002 (0.032)	-0.009 (0.183)	0.047** (0.018)	0.696 (0.460)

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Outcome variable	Coefficient estimate on indicator – OLS (s.e.)	Coefficient estimate on normalized test score across all subjects – IV-2SLS (s.e.)	Comparison group variable mean (s.d.)
Satisfaction with Kenyan democracy (0 to 1)	-0.031** (0.014)	-0.178* (0.091)	0.741 (0.285)
<i>Other political attitudes</i>			
“In our country these days, we should show more respect for authority.” (0 to 1) (versus “ <i>As citizens, we should be more active in questioning the actions of our leaders.</i> ”).	-0.058** (0.023)	-0.328* (0.169)	0.515 (0.456)
“In this country, it is sometimes necessary to use violence in support of a just cause.” (0 to 1) (versus “ <i>The use of violence is never justified in politics.</i> ”).	0.042* (0.024)	0.242 (0.170)	0.235 (0.383)
Kenya’s quality of government is better than two years ago (0-1)	-0.052* (0.031)	-0.299 (0.201)	0.54 (0.50)
Kenya’s economy is better than two years ago (0-1)	-0.050* (0.030)	-0.287 (0.202)	0.48 (0.50)

Table 5: Gender, Ethnicity, Religion, and Social Capital – Program Impacts and Summary Statistics
(Cohort 1 and Cohort 2, Busia District girls)

Outcome variable	Coefficient estimate on program indicator (s.e.)	Coefficient estimate on normalized test score across all subjects – IV-2SLS (s.e.)	Comparison group variable mean (s.d.)
Support for women’s rights index (0 to 1)	0.018 (0.018)	0.099 (0.111)	0.789 (0.271)
Ethnic identity is very important to respondent (0-1)	0.011 (0.021)	0.059 (0.324)	0.895 (0.307)
Religious identity is very important to respondent (0-1)	-0.002 (0.005)	-0.009 (0.031)	0.987 (0.115)
“Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?” (0-1)	-0.020 (0.024)	-0.113 (0.142)	0.167 (0.374)
Trusts members of own tribe (0-1)	-0.014 (0.022)	-0.071 (0.121)	0.845 (0.362)
Trusts members of other tribes (0-1)	-0.024 (0.030)	-0.131 (0.185)	0.317 (0.466)
Community group memberships (0 to 10)	0.10 (0.10)	0.58 (0.57)	0.28 (0.82)

Discussion / Conclusion

- Young Kenyan women with more education are more informed and more skeptical about politics
 - Will this stabilize or undermine democracy?
- Our methodological contribution is two-fold:
 - (1) Exogenous education addresses omitted variables
 - (2) Using long-run panel data with high tracking rates
- Limitations:
 - Young adult women in one Kenyan district
 - Political behavior (e.g., voting) would be useful
- Any implications for the recent Kenyan political crisis?