

ISDC:

The Role of Education

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Overview

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What we find

Education

Significant increase in educational attainment, secondary and tertiary education completion.

IPV dimensions

Decline in the likelihood of ever-married women experiencing psychological IPV. Impact on Physical and Sexual IPV not statistically significant.

Channels

Improvements in women's decision-making autonomy and a decline in acceptance of IPV, are important in explaining the effect of enhanced education on IPV.

Motivation

- Governments in Sub Saharan Africa (SSA); as of 2020, 17 countries had implemented some form of fee abolition or reduced-fee education policy at lower and/or upper secondary school levels, have committed to increasing public investment in secondary education in-form of school fee reduction or abolition.
- However, few countries have adopted the Universal Secondary Education (USE) policy due to high implementation costs.
- Its vital to assess the impact of nation wide educational policy reforms that provide universal secondary education in SSA.

Motivation

- IPV is the most prevalent type of violence against women, with prevalence levels in Sub-Saharan Africa exceeding the global average ([Cools and Kotsadam, 2017](#), [Sardinha et al., 2022](#)).
- Adverse impacts of IPV on victims in SSA range from psychological disorders to negative reproductive health outcomes ([Durevall and Lindskog, 2015](#), [Jankey et al., 2011](#), [Jewkes et al., 2010](#)).
- Education can be an effective tool in the fight against IPV.

Motivation

- Potential mechanisms underlying USE → increase education → women empowerment.
 1. enhances agency (Evans and Nambiar, 2013)
 2. changes in attitudes and social norms due to improved access to mass media, extensive social networks (Pierotti, 2013), and
 3. improve women's bargaining power within households (Anderson and Eswaran 2009).
 4. enables women to make better health choices (Bose and Heymann, 2019, Din cer et al., 2014, Kim, 2023)
 5. improved labour market opportunities (Erten and Keskin , 2018)
 6. provides pathways out of poverty, and increases political participation.

Objective

We study the effects of education, a distinct empowerment channel on IPV prevalence in Uganda, by utilizing the 2007 USE program as an exogenous shock to education.

In particular, we address the following questions:

Did the USE expansion policy in Uganda lead to improvements in women's educational outcomes?

Did the introduction of the USE program have an impact on the different dimensions of IPV?

Contribution

- This study adds to the small but growing body of research that assesses the long-term effects of education expansion policies at the secondary education level in developing countries.
- The study provides the first empirical evidence on the long-term effects of free universal secondary education policy on IPV prevalence in SSA.
- The results establish the potential of leveraging secondary education expansion policies as one of the tools in reducing domestic violence and improving women's position in society.

Background

Previous studies

In the economic literature, several theoretical models such as:

1. unitary models ([Becker, 1973](#)) and
2. household bargaining models ([Brown, 1980](#); [McElroy and Horney, 1981](#)),

have been used to explain the dynamics of marriage/relationships to further our understanding of domestic violence.

Background

Previous studies

- The relationship between education and IPV: correlational vs causality.
- Studies exploring the causal effect of education on IPV have focused on increasing education at the primary school level through compulsory school reform ([Akyol and Kırdar, 2022](#); [Erten and Keskin, 2018](#); [Zhou et al., 2021](#)).
- To date, only a few studies have examined the causal effect of increasing education at the secondary school level on women's experience of IPV.
 1. Education Stipend Program on Domestic Violence: Evidence from Bangladesh ([Sara and Priyanka 2023](#))
 2. Education policy reform in Peru ([Weitzman, 2018](#)).

Background

Uganda's Education Sector

- Education system in Uganda:
 1. Consists of primary, secondary, and tertiary education levels.
 2. 7 - 4 - 2 system and 2 - 5 years of higher education.
- Secondary Schooling before 2007:
 1. On average, 49.74% of primary school level graduates transitioned to secondary schooling for the period 2002 to 2006.
 2. Gross Enrolment Rate (GER) was 34%, Net Enrolment Rate (NER) 23% and Grade 8 (senior one) Gross Intake Rate (GIR) 59%.

Background

The 2007 Secondary School Expansion in Uganda

- Aims: increase access, reduce costs associated with secondary schooling, improve enrolment and attendance levels.
- Tuition fees were abolished using a grants system provided to eligible students through annual disbursements to participating schools.
- Implementation: Started with the 2006 primary school graduates in all public schools and private schools that opted into the program.
- School enrolment increased by 25% in 2009, with girls constituting 45.7% of the total enrolment ([MoES, 2009](#)).
- Primary to secondary transition increased to 64% ([MoES, 2009](#)).
- By 2014, GER, NER and GIR stood at 41, 44 and 61 per cent respectively.

- Data Sources:
 1. Uganda Demographic and Health Surveys (UDHS).
 2. Uganda National Household Surveys (UNHS).
 3. National Housing and Population census.
 4. Statistical extracts from the Annual Education Census and the USE national headcount 2007 - 2016.
- Sample Selection:
 1. Ever-married women aged 19 and above at the time of survey, born between 1984 - 1997.
- Treatment status: assigned by birth years, migration patterns are accounted for.
- Education outcomes: years of schooling, secondary schooling and tertiary education completion.

Empirical Strategy

- Exploits both cohort and geographical variations in USE exposure.
- Cohort variation
 1. Program eligibility depends on completion of primary schooling starting from 2006 onwards.
- Geographical variation
 1. Differential pre-program primary to secondary school transition rates across different districts.
 2. Transition rate = fraction of primary school completers who proceed to the secondary school level in the pre-USE period.

Empirical Strategy

- Cohort variation in USE exposure.

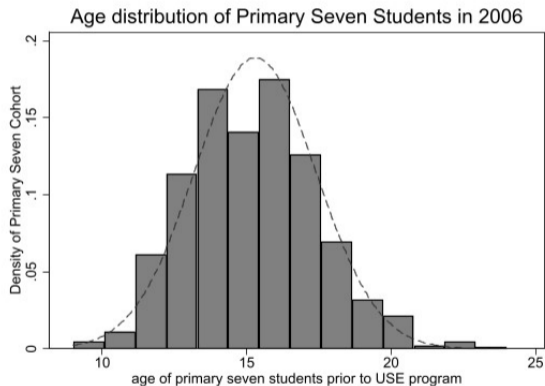


Figure. Age distribution of the first USE cohort

Empirical Strategy

- Geographical variation in USE exposure.

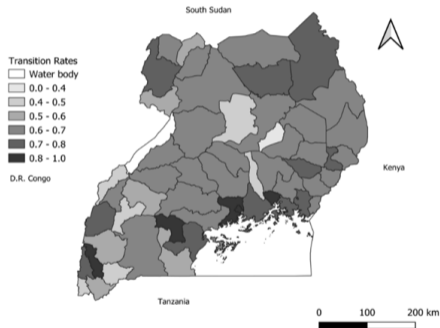


Figure. Transition rate by district.

Empirical strategy

Difference in Difference strategy

Difference in Differences framework, main specification:

$$Y_{ijd} = \beta_0 + \beta_1(Intensity_d * USE_j) + \gamma X_{ijd} + \delta_j + \theta_d + \varepsilon_{ijd} \quad (1)$$

$Intensity_d = (1 - transition\ rate)$, average rate in each district.

USE_j , is a dummy equal to one if individual is born $1990 \leq j \leq 1997$ and zero otherwise.

$\sigma_d = district\ dummies$, $\mu_j = birth\ cohort\ dummies$

Standard errors are clustered at district level.

Empirical strategy

IV strategy

Ordinary Least Squares (OLS) model and 2SLS model:

$$Y_{ijd} = \alpha_0 + \alpha_1 Educ_{ijd} + \lambda X_{ijd} + \mu_j + \theta_d + \varepsilon_{ijd} \quad (2)$$

$$Educ_{ijd} = \gamma_0 + \gamma_1(Intensity_d * USE_j) + \tau X_{ijd} + \mu_j + \theta_d + \varepsilon_{ijd} \quad (3)$$

Empirical strategy

Event Study

Fig. 1. *Interaction between year of birth and treatment intensity in the years of schooling regression*



Notes. Coefficients (and their 95% confidence intervals based on standard errors at district level) reported are the estimated interaction coefficient between USE treatment intensity and year of birth, with cohort born 1981 as the reference. Sample used consists of all women in the survey who have ever been married.
Source: UDHS 2011 & 2016.

Main Result

Universal Secondary Education and Education Attainment

	(1-transition rate) x USE			Mean Dependent Variable	Obs.
	(1)	(2)	(3)		
Years of schooling	3.360*** (0.591)	3.621*** (0.645)	3.781*** (0.672)	9.83	2299
Adjusted R2	0.118	0.136	0.137		
(1-transition rate) x USE F-statistic	32.34	32.34	32.34		
Controls	No	No	Yes		
Trends	No	Yes	Yes		

Notes: Robust standard errors in brackets, clustered at district. All regressions include year of birth, district, religion, and ethnicity fixed effects. Sample used is for all women in the survey who have ever been married. Coefficients reported are the estimated interaction coefficient between treatment intensity and a USE indicator variable equal to one for all individuals eligible program. Significance levels *** $p < 0.01$, ** $p < 0.05$, $p < 0.1$. Source: 2011 and 2016 UDHS.

Results

USE Program Impact on the Education Attainment of Ever-married Women

	Years of schooling	Completed secondary	Higher education
DiD Estimate	3.781*** (0.672)	0.431*** (0.106)	0.367*** (0.0944)
Mean Dependent Variable	9.84	0.19	0.16
Controls	Yes	Yes	Yes
Trends	Yes	Yes	Yes
Observations	2299	2299	2299

Notes: Robust standard errors in parentheses, clustered at district.

Results

Universal Secondary Education and Intimate Partner Violence

	(1-transition rate) × USE			Mean Dependent Variable
	(1)	(2)	(3)	
Physical Violence (= 1 if woman has experienced)	-0.080 (0.110)	-0.082 (0.112)	-0.130 (0.107)	0.30
Sexual Violence (= 1 if woman has experienced)	0.071 (0.090)	0.0733 (0.0937)	0.0508 (0.0908)	0.20
Psychological Violence (= 1 if woman has experienced)	-0.219** (0.098)	-0.223** (0.092)	-0.243** (0.0934)	0.76
Controls	No	No	Yes	
Trends	No	Yes	Yes	
Obs.	2299	2299	2299	

Notes: Robust standard errors in brackets, clustered at district. All regressions include year of birth, district, religion, and ethnicity fixed effects. Sample used is for all women in the survey who have ever been married. Coefficients reported are the estimated interaction coefficient between treatment intensity and a USE indicator variable equal to one for all individuals eligible program. Significance levels *** $p < 0.01$, ** $p < 0.05$, $p < 0.1$. Source: 2011 and 2016 UDHS.

Results

Instrumental Variable Estimates

	OLS	2SLS
	(1)	(2)
Physical Violence (= 1 if woman has experienced)	-0.019*** (0.005)	-0.034 (0.028)
Sexual Violence (= 1 if woman has experienced)	-0.014*** (0.003)	0.014 (0.024)
Psychological Violence (= 1 if woman has experienced)	-0.013*** (0.003)	-0.064*** (0.023)
Observations	2299	2299
First-stage F-statistic		36.8

Notes: Robust standard errors in brackets, clustered at district.

Results

Robustness

- Placebo Test
- Exclusion of two most urbanised districts of Kampala and Wakiso
- Exclusion of LRA insurgency affected areas
- Alternative measures of program intensity.
 1. Alternative transition cohorts and
 2. 2002 Uganda National Housing and Census

Results

Mechanism

- Possible transmission mechanisms:
 1. Tolerance of IPV
 2. Labour market outcomes, and
 3. Participation in decision marking.

Summary of Findings

Educational Outcomes

- Results show that the USE program increased the number of completed years of schooling, a 24% increase relative to the average educational attainment.
- Secondary school and tertiary education completion increased 19-21% relative to the average completion rates.
- These significant positive effects are consistent with findings elsewhere in SSA.

Summary of Findings

IPV Prevalence

- Exposure to the USE program is associated with:
 1. reduces the probability of a woman experiencing psychological IPV.
 2. Impacts on other IPV dimensions - physical and sexual but these are not statistically significant.
- Improvements in women's decision-making autonomy and a decline in acceptance of IPV, are important in explaining the effect of enhanced education on IPV.
- 2SLS estimates indicate a 6.4 pp decrease in the likelihood of experiencing psychological violence.

Concluding remarks

- Education can be an effective tool in reducing domestic violence and improving women's position in society
- Expansion of secondary schooling in Uganda has had significant impacts on education attainment and, to a lesser extent, improved women's empowerment through intrinsic and instrumental agency among married women.
- There exists limited economic empowerment to provide women with better bargaining options within the household.
- To enhance the benefits of education further, other policies to enhance women's economic power need to be improved.

Asante!

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Pre-Program Trends

Table. Pre-Program Common Trends

	(1)	(2)	(3)	Obs.
<i>Coefficient on Intensity * Trend</i>				
Years of schooling	-0.340 (0.205)	-0.347* (0.201)	-0.331 (0.202)	1265
Physical Violence (= 1 if woman has experienced)	0.057* (0.033)	0.045 (0.035)	0.054 (0.040)	1189
Sexual Violence (= 1 if woman has experienced)	0.034 (0.034)	0.027 (0.035)	0.025 (0.036)	1188
Psychological Violence (= 1 if woman has experienced)	0.012 (0.041)	0.045 (0.042)	0.056 (0.043)	1189
Controls	No	Yes	Yes	
Regional linear trends	No	No	Yes	

Notes: Pre-program observations (1982 - 1989) sample is used.

Gender Beliefs and attitudes: Less Tolerance of IPV

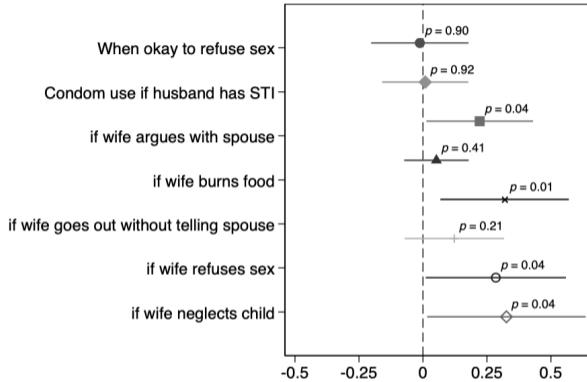


Figure. Beliefs and Attitudes.

Employment, Compensation and Entrepreneurship

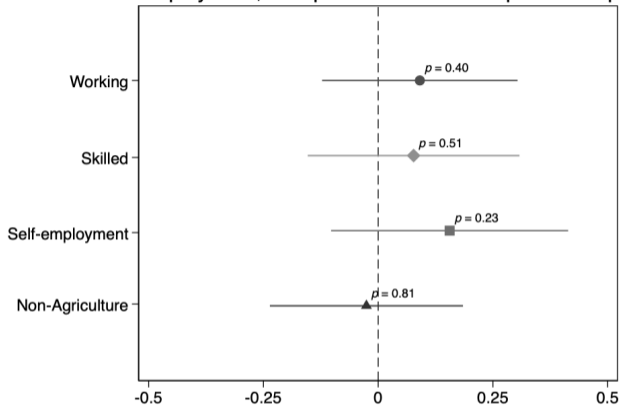


Figure. Labor.

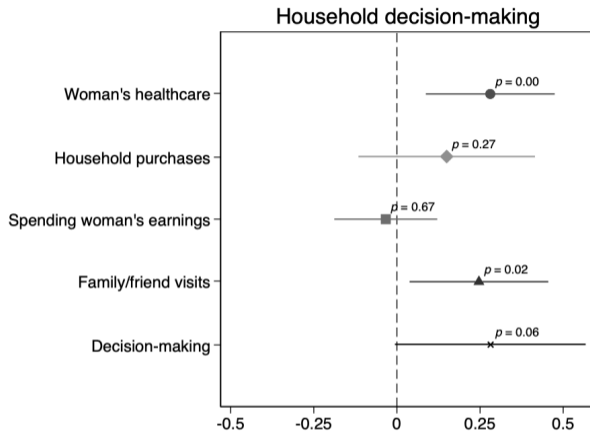


Figure. Decision-making.

Table. Placebo Test

	Years of schooling	Physical Violence	Sexual Violence	Psychological Violence
DiD Estimate (placebo)	-1.297 (1.060)	-0.047 (0.177)	-0.0002 (0.164)	-0.232 (0.169)
Controls	Yes	Yes	Yes	Yes
Observations	1748	1748	1748	1748

Notes: Robust standard errors in parentheses, clustered at district. All regressions include year of birth, district, and ethnicity fixed effects. Reported coefficients are the estimated interaction between the continuous treatment intensity and a USE indicator variable equal to one for all individuals eligible program. Placebo sample comprises of individuals born 1978 – 1989 who are ineligible for treatment. Transition rate is defined as the percentage of individuals who completed primary schooling and proceeded to the secondary education level, same as what is used in the main specification. Significance levels *** $p < 0.01$, ** $p < 0.05$, $p < 0.1$. Source: 2011 and 2016 UDHS.

Table. Impact estimates of USE Program on IPV Prevalence Excluding Kampala and Wakiso

	Years of schooling	Physical Violence	Sexual Violence	Psychological Violence
DiD Estimate	3.334*** (0.775)	-0.146 (0.128)	0.082 (0.106)	-0.251** (0.118)
Controls	Yes	Yes	Yes	Yes
Observations	1892	1891	1892	1892

Notes: Robust standard errors in parentheses, clustered at district. All regressions include year of birth, district, and ethnicity fixed effects. Sample used is for all women in the survey who have ever been married. Coefficients reported are the estimated interaction coefficient between treatment intensity and a USE indicator variable equal to one for all individuals eligible program. Significance levels *** $p < 0.01$, ** $p < 0.05$, $p < 0.1$. Source: 2011 and 2016 UDHS.

Table. Impact Estimates of USE Program on IPV Prevalence Excluding Areas Affected by LRA Insurgency

	Years of schooling	Physical Violence	Sexual Violence	Psychological Violence
DiD Estimate	2.987*** (0.770)	-0.041 (0.139)	0.059 (0.106)	-0.245** (0.103)
Controls	Yes	Yes	Yes	Yes
Observations	1838	1838	1838	1838

Notes: Robust standard errors in parentheses, clustered at district. All regressions include year of birth, district, and ethnicity fixed effects. Sample used is for all women in the survey who have ever been married. Coefficients reported are the estimated interaction coefficient between treatment intensity and a USE indicator variable equal to one for all individuals eligible program. Significance levels *** $p < 0.01$, ** $p < 0.05$, $p < 0.1$. Source: 2011 and 2016 UDHS.

Table. Impact Estimates of USE Program on IPV Prevalence Using Alternative Transition Rates

	Years of schooling	Physical Violence	Sexual Violence	Psychological Violence
DiD Estimate				
1984 – 1989 <i>transition rates</i>	3.327*** (0.525)	-0.127 (0.109)	0.079 (0.094)	-0.247** (0.089)
1985 – 1989 <i>transition rates</i>	3.189*** (0.608)	-0.115 (0.104)	0.055 (0.091))	-0.255*** (0.095)
1986 – 1989 <i>transition rates</i>	2.977*** (0.33)	-0.049 (0.099)	0.054 (0.089)	-0.229* (0.093)
Controls	Yes	Yes	Yes	Yes
Observations	2299	2299	2298	2299

Notes: Robust standard errors in parentheses, clustered at district. All regressions include year of birth, district, and ethnicity fixed effects. Sample used is for all women in the survey who have ever been married. Coefficients reported are the estimated interaction coefficient between treatment intensity and a USE indicator variable equal to one for all individuals eligible program. Significance levels *** $p < 0.01$, ** $p < 0.05$, $p < 0.1$. Source: 2011 and 2016 UDHS.

Table. Impact Estimates of USE Program on IPV Prevalence Using Using Transition Rate Constructed From 2002 UNPHC

	Years of schooling	Physical Violence	Sexual Violence	Psychological Violence
DD Estimate	4.065*** (0.761)	-0.115 (0.204)	0.116 (0.146)	-0.489** (0.192)
Controls	Yes	Yes	Yes	Yes
Observations	2299	2299	2298	2299

Notes: Robust standard errors in parentheses, clustered at district. All regressions include year of birth, district, and ethnicity fixed effects. Sample used is for all women in the survey who have ever been married. Coefficients reported are the estimated interaction coefficient between treatment intensity and a USE indicator variable equal to one for all individuals eligible program. Significance levels *** $p < 0.01$, ** $p < 0.05$, $p < 0.1$. Source: 2011 and 2016 UDHS.