Does Education Make Women Work?
Evidence from Free Primary Education Laws

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Does Education Make Women Work?

1. Does free primary education (FPE) increase schooling attainment for females in SSA, and by how much? How general is this? Is it larger than for males?

2. Does exposure to more schooling translate into more work (LFP), better/different jobs for women?

This paper: Uses multiple natural experiments to identify reduced-form schooling-work relationship for women in SSA.

Why focus on women's schooling and work?

▶ Economic: half of potential workforce is female: "We cannot end poverty on a livable planet with half the population excluded from opportunity" (World Bank 2024-2030 Gender Strategy). Limit costs of misallocation (Hsieh et al., 2019)

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▶ Empowerment: Getting women into (better) jobs can empower (Heath and Jayachandran, 2018; Duflo, 2012)

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Why focus on SSA?:

Scant evidence (Dinkelman et al., 2025) on RTE in SSA, almost all for men e.g. Akresh et al. (2022); Donovan et al. (2023); Duflo (2001); Khanna (2023). Exception: Duflo et al. (2024)

One perspective from the lit.

Schooling promotes work at micro and macro levels

Expect more/better jobs (for men *and* women):

- ▶ **Positive returns**:
    - ▶ Private : Case (2006), "The primacy of education"
    - ▶ Social/externalities: Schultz (1999), HK for females; Duflo (2004) macro gains from more productive labor
- ▶ **Growth** e.g. Hall and Jones (1999), Bils and Klenow (2000)
- ▶ **Structural transformation** e.g. Hendricks and Schoellman (2017), Porzio et al. (2022); Buera et al. (2022)

A different perspective

Historically, women exit the LM as economy grows

U-shape of female LFP: Ngai et al. (2024); Goldin (1995); Durand (1975); Sinha (1967).

Figure 2: Adjusted employment rates and industry shares, 1870-2019.
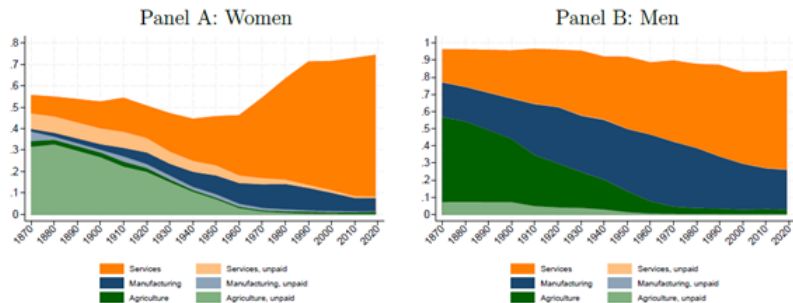
Notes. The sample includes individuals aged 18-64. Employment figures are adjusted to take into account unpaid family work, according to Ruggles (2015). Individual weights are used in the calculation of employment rates. Source: US Census and ACS, 1870-2019.

How will education affect women's work in SSA?

This paper fills that gap.

Hint? Prior work in India (Afridi et al., 2017) suggests more schooling *lowers* female LFP...

Challenges to Estimating School-Work Relationship

1. **Internal validity**: exogenous shock(s) to schooling? Solution: FPE laws in a DiD setting

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2. **Data and timing**: data scarcity in SSA. Solution: Build own policy dataset; LR outcomes from multiple Census waves

3. **External validity**: Africa is not a country: 55 countries! Can we learn anything general? (Rosenzweig and Udry, 2020). Solution: aggregate evidence from multiple countries

Roadmap

- ▶ Context
  - ▶ Women's work in SSA
  - ▶ FPE in Africa
- ▶ Data
  - ▶ New dataset of FPE policies in Africa
  - ▶ Census data on key outcomes
- ▶ Empirical strategy: DiD
- ▶ Results:
  1. HK impacts across countries
  2. Meta-analyses of HK effects
  3. Reduced form LM impacts across countries
- ▶ Discussion and interpretation

Context (1): How much do African women work?

(a) Female LFP
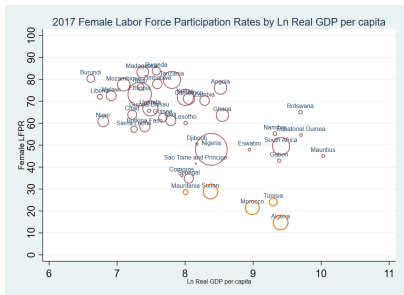
(b) Female market and home hours
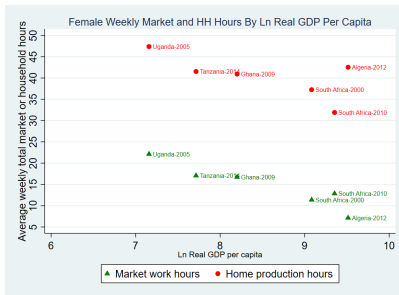
Dinkelman and Ngai (2022):

▶ Heterogeneous FLFPR: sometimes very high, or very low

▶ Market hours of work are generally low

▶ Home production hours are generally high

Context (2): What types of work do African women do?

Structural transformation in jobs for African women
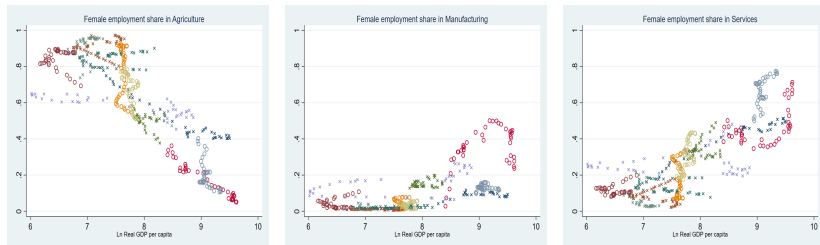
Dinkelman and Ngai (2022): Employment share data for 11 African countries are from the Grönigen Center's Africa Sector Database. Real GDP per capita is from Penn World Tables version 9.1

Context (3): Human Capital in SSA since Independence

Primary Completion Rate
Sub-Saharan Africa (excluding high income)

UNESCO Institute for Statistics (UIS). UIS.Stat Bulk Data Download Service. Accessed September 30, 2024.
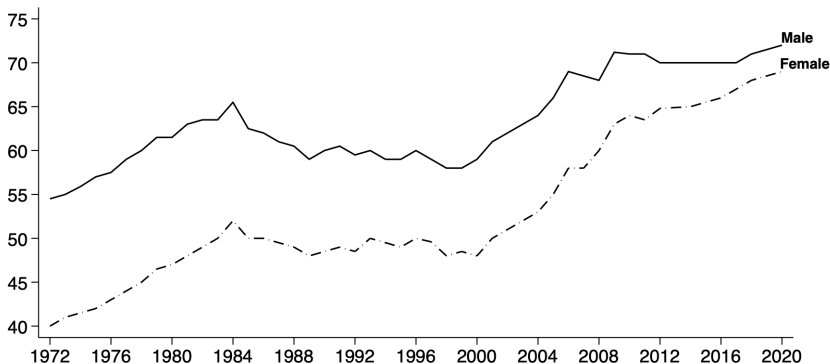
Data source: World Bank

Long way to go: Recent attainment $\geq$ 90% in Brazil, India, China.

Data (1): FPE Laws and Policies in SSA

Free Primary Education means no school fees:
practice/implementation varies.

- ▶ Fantastic RA team built new dataset of FPE start dates using legal and policy documents collated from across 55 African countries (Dinkelman, 2024)

    - ▶ Sources documented
    - ▶ Start/end dates
    - ▶ Compulsory/not
    - ▶ Individual eligibility criteria

Scope of Today's Study

(c) FPE Database

(d) FPE subsample

Data are from FPE Laws Database, on ICPSR later this year (Dinkelman, 2024).

Data (2) Subsample for this paper: 20% of SSA pop.

All have HK outcomes, not all have labor market outcomes (yet).

- ▶ West Africa: Ghana
- ▶ East Africa: Ethiopia, Kenya, Tanzania, and Uganda
- ▶ Southern African: Malawi and Zambia

- ▶ Annual GDP p.c.: 625USD (Malawi) to 2,400USD (Ghana) $\sim$ India

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1. **Early FPE**: Ghana, Tanzania, Kenya, Zambia
2. **Late FPE**: Ethiopia, Malawi, Uganda

RelatedLit

Data (3) Treatment, Eligibility, Data by Country

| | Early FPE | | Late FPE | | Analysis Data (Census) | |
Country	Start/End	Age Elig.	Start	Age Elig.	Early FPE	Late FPE
Ghana	1961/1965	6 to 11	-	-	1984/2010	-
Kenya	1974/1988	6 to 11	-	-	1989/2009	-
Tanzania	1974/1978	7 to 12	-	-	1988/2012	-
Zambia	1965/1980	7 to 13	-	-	1990/2010	-
Ethiopia	-	-	1995	7 to 12	-	1984/2007
Malawi	-	-	1994	6 to 13	-	1987/2008
Uganda	-	-	1997	6 to 12	-	1991/2014

Note: Start and end dates of Early FPEs, as well as start dates for late FPEs are based on institutional documents and legal ordinances. Age eligibility corresponds to the age range in which primary education is available in the country.

Data (4): Outcomes

Sample of women aged 18-40 inclusive:

▶ **Human Capital variables**:
  1. Years of schooling attained
  2. Primary school completed
  3. Literate
  4. Any secondary schooling

▶ **Labor Market variables**:
  1. Labor Force Participation: (mostly) in the last week; question probes for any work for trade/pay/profit; paid and unpaid work. LFP ≡ work.
  2. Type of work: wage, self-employment, unpaid worker
  3. Sector of work: agriculture, manufacturing, services

Data (5): Summary Statistics

	Ghana	Kenya	Tanzania	Zambia	Ethiopia	Malawi	Uganda
Education							
Yrs of schooling	4.02	6.29	3.94	4.91	0.57	2.15	3.32
Complete prim.	0.38	0.68	0.47	0.52	0.04	0.10	0.30
Any sec.	0.35	0.38	0.05	0.26	0.03	0.04	0.12
Lit.	.	0.83	0.60	0.69	0.17	0.37	0.49
Labor Market							
LFP	0.88	0.69	0.86	0.32	.	0.79	0.67
Wage work	0.09	.	0.07	0.25	.	0.04	0.07
Self-empl.	0.74	.	0.89	0.21	.	0.95	0.29

Table notes: Means of outcome variables are provided for the main sample consisting of females in selected age groups from the earliest census year for each country.

Empirical strategy: Difference-in-differences

Idea: When FPE introduced, some children are age-eligible and others are too old.

Compare FPE-eligible females to FPE non-eligible females in Census years after FPE implemented (i.e. adulthood).

Difference out same exposed/non-exposed comparison across adult females from a different Census year, when FPE was not in place (before/after).

Choose Census waves/sample to have non-overlapping treatment and control cohorts.

Rinse and Repeat: different countries, different years, early/late treatments

Illustration: Malawi, Late FPE in 1994

Birth cohorts:

	TREATED CENSUS 2008 Age 18 to 38	UNTREATED CENSUS 1987
Strict Elig.	b. 1988-1990	
Partial Elig.	b. 1981-1987	
Control	b. 1970-1980	

Illustration: Malawi, Late FPE in 1994

Birth cohorts:

	TREATED CENSUS 2008 Age 18 to 38	UNTREATED CENSUS 1987 Age 18 to 38
Strict Elig.	b. 1988-1990	b.1967-1969
Partial Elig.	b. 1981-1987	b.1960-1966
Control	b. 1970-1980	b.1949-1959

Illustration: Malawi, Late FPE in 1994

Age at Census time:

	TREATED CENSUS 2008	UNTREATED CENSUS 1987
Strict Elig.	18-20	18-20
Partial Elig.	20-27	20-27
Control	28-38	28-38

Empirical strategy: Difference-in-differences

$$HK_{it} = \beta_0 + \beta_1 TreatedWave_t * StrictElig_i + \beta_2 StrictElig_i +$$
$$\beta_3 TreatedWave_t + \sum_{i=1}^{A} \gamma_i X_i + \eta_{it} \quad (1)$$

where:

- HK_{it} educ. (or lab. mkt) vars
- X_i age dummies
- η_{it} idiosyncratic error term
- $TreatedWave_t = 1$ after FPE; 0 if <u>before</u> FPE turns on OR <u>after</u> FPE turns off
- $StrictElig_i = 1$ if person was age-eligible for primary schooling during the FPE regime; same age group defined as eligible in the non-treated wave
- Alternate measure: $Intensity_i = \frac{(PSyearsElig.underFPE)}{(Totalpot.yearsofPS)_i}$

Identifying variation

Differential variation in FPE exposure across cohorts, year of Census, and country.

1. **Late/Second wave FPE**: compare attainment across age-eligible vs non-age-eligible cohorts (young vs old, post) after FPE introduced in the 1990s, to the same comparison in the before period (young vs old, pre)

2. **Early/First Wave FPE**: compare attainment across age-eligible vs non-age-eligible cohorts (young vs old, now) while FPE is in place, to the same comparison after FPE turn off (young vs old, later)

Identification assumption: age profile of educational attainment in non-treated waves is a good counterfactual age profile of educational attainment, in the absence of FPE.

Advantages of this design

- ▶ Consistent research design
- ▶ Country-by-country: no staggered treatment
- ▶ Multiple countries, better external validity: less sensitive to macro shock confounders (Rosenzweig and Udry, 2020)
- ▶ But: Temporary vs permanent FPE comparison
- ▶ Meta-analysis to characterize differences across countries (e.g. implementation, length)

Note: DiD estimates include any spillovers/GE effects through wages (but: few wage jobs). Total LM effect of scaling up education interventions; policy-relevant for each country.

Education impacts

1. Early FPE raises **Quantity** of Female HK: Yrs of School

	Strict Measure							
	Ghana		**Kenya**		**Tanzania**		**Zambia**	
	YrsEdu	ComPrim	YrsEdu	ComPrim	YrsEdu	ComPrim	YrsEdu	ComPrim
Elig.*Treated Wave	0.627***		0.663***		1.006***		0.283**	
	(0.128)		(0.148)		(0.212)		(0.100)	
Treated Wave	-2.467***		-1.739***		-2.515***		-1.993***	
	(0.120)		(0.119)		(0.212)		(0.088)	
N	806,462		445,070		1,217,600		329,682	
Adj R-Squared	0.116		0.038		0.149		0.051	
Control Wave's Mean	5.522		7.420		5.414		6.018	

Table notes: Estimates are person weighted, include cohort FE, and SE are clustered on age. * for significance levels.

1. Early FPE raises **Quantity** of Female HK: Prim. Completion

	Ghana		Kenya		Tanzania		Zambia	
	YrsEdu	ComPrim	YrsEdu	ComPrim	YrsEdu	ComPrim	YrsEdu	ComPrim
Elig.*Treated Wave	0.627***	0.062***	0.663***	0.057***	1.006***	0.243***	0.283**	0.051***
	(0.128)	(0.011)	(0.148)	(0.016)	(0.212)	(0.047)	(0.100)	(0.009)
Treated Wave	-2.467***	-0.219***	-1.739***	-0.128***	-2.515***	-0.302***	-1.993***	-0.175***
	(0.120)	(0.011)	(0.119)	(0.015)	(0.212)	(0.046)	(0.088)	(0.004)
N	806,462	806,462	445,070	445,070	1,217,600	1,217,600	329,682	329,682
Adj R-Squared	0.116	0.104	0.038	0.017	0.149	0.133	0.051	0.031
Control Wave's Mean	5.522	0.520	7.420	0.756	5.414	0.646	6.018	0.610

Table notes: Estimates are person weighted, include cohort FE, and SE are clustered on age. * for significance levels.

2. Larger impacts of Early FPE using Intensity

	Intensity Measure			
	Ghana		Tanzania	
	YrsEdu	ComPrim	YrsEdu	ComPrim
Intens.*Treated Wave	0.695***	0.077***	1.981***	0.456***
	(0.208)	(0.018)	(0.270)	(0.053)
Treated Wave	-2.565***	-0.230***	-3.048***	-0.424***
	(0.148)	(0.013)	(0.164)	(0.030)
N	806,462	806,462	1,217,600	1,217,600
Adj R-Squared	0.116	0.105	0.155	0.155
Control Wave's Mean	5.522	0.520	5.414	0.646

Table notes: Estimates are person weighted, include cohort FE, and SE are clustered on age. * for significance levels.

Note: Intensity measure overlaps different Census waves in Kenya and Zambia; can only be used in a "clean" way for Ghana and Tanzania.

3. Late FPE also raises **Quantity** of Female HK

	Strict Measure					
	Ethiopia		Malawi		Uganda	
	YrsEdu	ComPrim	YrsEdu	ComPrim	YrsEdu	ComPrim
Eligible*Treated Wave	0.291***	0.041***	0.735***	0.082***	0.349**	0.066***
	(0.073)	(0.007)	(0.161)	(0.020)	(0.147)	(0.014)
Treated Wave	0.954***	0.092***	2.576***	0.181***	2.756***	0.242***
	(0.071)	(0.007)	(0.092)	(0.009)	(0.124)	(0.012)
N	867,611	867,611	410,550	410,550	974,155	974,155
Adj R-Squared	0.070	0.060	0.166	0.079	0.173	0.124
Control Wave's Mean	0.902	0.069	3.872	0.226	5.345	0.491

Table notes: Estimates are person weighted, include cohort FE, and SE are clustered on age. * for significance levels.

4. Both FPEs raise **Quality** of Female HK: Literacy

| | Strict Measure: Literate | | | | |
	Tanzania	Zambia	Ethiopia	Malawi	Uganda
Eligible*Treated Wave	0.165***	0.046***	0.067***	0.046***	-0.017*
	(0.033)	(0.010)	(0.010)	(0.012)	(0.009)
Treated Wave	-0.212***	-0.148***	0.084***	0.308***	0.168***
	(0.032)	(0.008)	(0.007)	(0.007)	(0.007)
N	1,217,594	329,682	867,611	410,550	974,155
Adj R-Squared	0.087	0.025	0.066	0.143	0.083
Control Wave's Mean	0.723	0.769	0.202	0.570	0.606

Table notes: Estimates are person weighted, include cohort FE, and SE are clustered on age. * for significance levels.

Uganda has complex mother tongue teaching policies; more recent switch away from English towards mother tongue.

5. **Pipeline Effects** of both waves of FPE on high school enrollment

	Strict Measure: Any Secondary						
	Ghana	**Kenya**	**Tanzania**	**Zambia**	**Ethiopia**	**Malawi**	**Uganda**
Eligible*Treated Wave	0.059***	0.106***	-0.102***	0.048***	-0.040***	0.096***	0.108***
	(0.010)	(0.016)	(0.029)	(0.013)	(0.004)	(0.021)	(0.017)
Treated Wave	-0.211***	-0.293***	-0.160***	-0.219***	0.043***	0.130***	0.186***
	(0.010)	(0.011)	(0.022)	(0.012)	(0.003)	(0.011)	(0.015)
N	806,462	445,070	1,217,600	329,682	867,611	410,550	974,155
Adj R-Squared	0.098	0.059	0.084	0.049	0.028	0.070	0.101
Control Wave's Mean	0.485	0.567	0.147	0.376	0.045	0.128	0.271

Table notes: Estimates are person weighted, include cohort FE, and SE are clustered on age. * for significance levels.

Tanzania gutted funding for high school after FPE was introduced.

Meta-Analysis: Pulling together female HK results

Assume that there is a distribution of treatment effects.

Random effects model: combines DiD estimates across j countries e.g. (Fabregas et al., 2024)

Suppose each ATE can be decomposed into true effect μ, plus ϵ_j measurement error (sampling variability), plus ω_j country-specific heterogeneity:

$$\beta_{1j} = \mu + \epsilon_j + \omega_j \tag{2}$$

with

$$\epsilon_j \sim N(0, \sigma_j) \tag{3}$$

$$\omega_j \sim N(0, \tau^2) \tag{4}$$

Estimate a weighted ATE

One way to weight:

$$\hat{\mu} = \frac{\sum_{j=1}^{k} w_j \hat{\beta}_{1j}}{\sum_{j=1}^{k} w_j} \qquad (5)$$
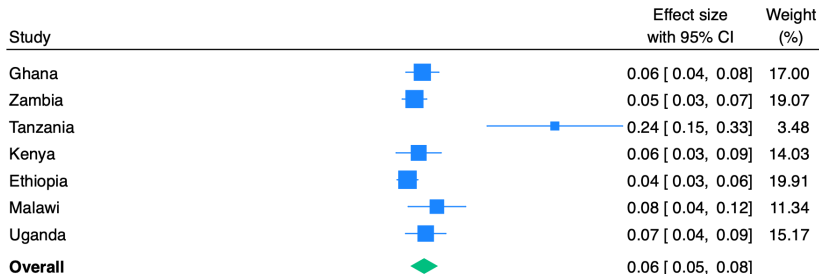
where the weights depend on the relative sizes of sampling variability and TE heterogeneity:

$$w_j = \frac{1}{(\hat{\tau}^2 + \hat{\sigma}_j^2)} \qquad (6)$$

w_j larger when β_{1j} is more precisely estimated (given the RE); and conditional on within-country sampling variation, when $\hat{\tau}^2$ across-country variation is smaller (less between-country variation)

Treatment effect heterogeneity: Completed Primary

Outcome: Primary Completion (Strict)

Study	Effect size with 95% CI	Weight (%)
Ghana	0.06 [0.04, 0.08]	17.00
Zambia	0.05 [0.03, 0.07]	19.07
Tanzania	0.24 [0.15, 0.33]	3.48
Kenya	0.06 [0.03, 0.09]	14.03
Ethiopia	0.04 [0.03, 0.06]	19.91
Malawi	0.08 [0.04, 0.12]	11.34
Uganda	0.07 [0.04, 0.09]	15.17
Overall	0.06 [0.05, 0.08]	

Heterogeneity: $\tau^2 = 0.00$, $I^2 = 73.13\%$, $H^2 = 3.72$
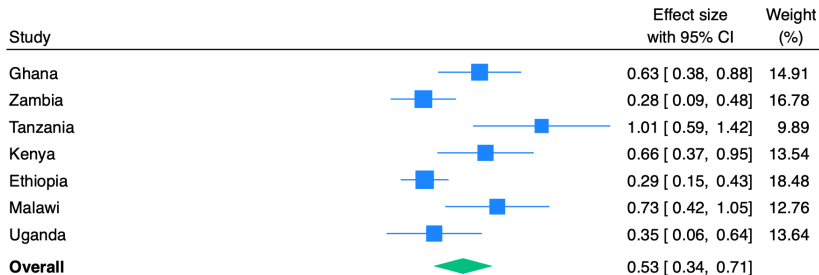
Test of $\theta_i = \theta_j$: Q(6) = 22.33, p = 0.00

Test of $\theta = 0$: z = 6.71, p = 0.00

Random-effects DerSimonian–Laird model

Treatment effect heterogeneity: Years of schooling

Outcome: Years of Schooling (Strict)

Study		Effect size with 95% CI	Weight (%)
Ghana		0.63 [0.38, 0.88]	14.91
Zambia		0.28 [0.09, 0.48]	16.78
Tanzania		1.01 [0.59, 1.42]	9.89
Kenya		0.66 [0.37, 0.95]	13.54
Ethiopia		0.29 [0.15, 0.43]	18.48
Malawi		0.73 [0.42, 1.05]	12.76
Uganda		0.35 [0.06, 0.64]	13.64
Overall		0.53 [0.34, 0.71]	

Heterogeneity: τ^2 = 0.04, I^2 = 72.65%, H^2 = 3.66

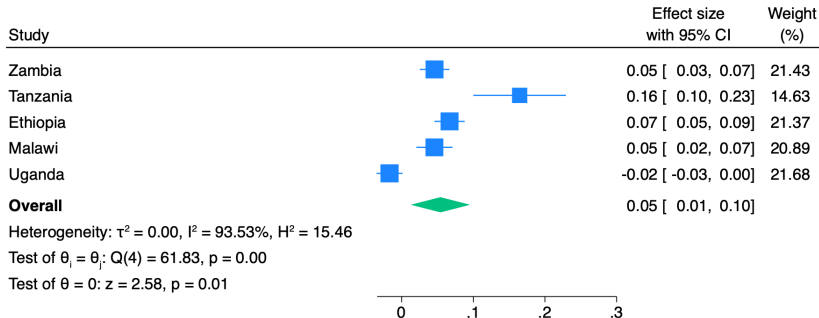Test of $\theta_i = \theta_j$: Q(6) = 21.93, p = 0.00

Test of $\theta = 0$: z = 5.71, p = 0.00

Random-effects DerSimonian–Laird model

Treatment effect heterogeneity: Literacy

Outcome: Literacy (Strict)

Study	Effect size with 95% CI	Weight (%)
Zambia	0.05 [0.03, 0.07]	21.43
Tanzania	0.16 [0.10, 0.23]	14.63
Ethiopia	0.07 [0.05, 0.09]	21.37
Malawi	0.05 [0.02, 0.07]	20.89
Uganda	-0.02 [-0.03, 0.00]	21.68
Overall	0.05 [0.01, 0.10]	

Heterogeneity: $\tau^2 = 0.00$, $I^2 = 93.53\%$, $H^2 = 15.46$

Test of $\theta_i = \theta_j$: Q(4) = 61.83, p = 0.00

Test of $\theta = 0$: z = 2.58, p = 0.01

Random-effects DerSimonian–Laird model

Taking stock

FPE policies raised female schooling, regardless of:

- ▶ country
- ▶ time period
- ▶ temporary/permanent status (Early/Late FPE)
- ▶ variation in implementation

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Effects greater than Indonesia school construction Duflo (2001),
Indian Primary School Funding expansion Khanna (2023);
attainment rises to 5-6 years (Kenya: 8 years, Ethiopia:3 years).

Also: 6. FPE raised female schooling $\geq$ men's

Gender education gap shrunk: triple difference on pooled sample with female interaction terms.

	Strict Measure: Yrs of School						
	Ghana	Tanzania	Zambia	Kenya	Ethiopia	Malawi	Uganda
Fem.*Elig.*Treated	0.176	0.974***	0.327***	0.295**	0.570***	0.304*	-0.003
	(0.130)	(0.185)	(0.102)	(0.102)	(0.065)	(0.153)	(0.070)
Elig.*Treated	0.522**	0.027	-0.074	0.372***	-0.277***	0.404***	0.350***
	(0.192)	(0.116)	(0.166)	(0.091)	(0.042)	(0.063)	(0.095)
N	1,550,588	2,243,801	617,365	843,742	1,651,375	789,121	1,882,218
Adj R-Squared	0.105	0.128	0.068	0.033	0.100	0.168	0.147
Control Wave's Mean	6.634	5.885	6.631	7.584	1.381	4.790	6.036

Table shows the reduced form estimates of the early wave FPE on females' labor market outcomes and men's outcomes. All regressions included person weights and cohort fixed effects and a full set of female interaction terms. Standard errors are clustered at age level.
$* * * \ p < 0.01, * * \ p < 0.05, * \ p < 0.1$

So: Does Education Make Women Work?

No.

7. Early and Late FPE exposure **reduces** FLFPR

Except perhaps in Tz:

	Strict Measure: LFP				
	Ghana	Tanzania	Zambia	Malawi	Uganda
Eligible*Treated Wave	-0.070***	0.054**	-0.067**	-0.061***	-0.024***
	(0.024)	(0.020)	(0.029)	(0.017)	(0.007)
Treated Wave	0.123***	0.177***	-0.134***	-0.040***	0.155***
	(0.024)	(0.016)	(0.027)	(0.004)	(0.002)
N	805,336	1,217,420	329,682	410,550	968,810
Adj R-Squared	0.127	0.072	0.046	0.036	0.056
Control Wave's Mean	0.806	0.756	0.427	0.757	0.778

Table notes: Estimates are person weighted, include cohort FE, and SE are clustered on age. * for significance levels.

Note: LFP is not measured in both waves in Kenya and Ethiopia Census.

MensLFPR

8. Conditional on LFP: Δ% Agric. Empl.?

	Strict Measure				
	Ghana	**Tanzania**	**Zambia**	**Malawi**	**Uganda**
Eligible*Treated Wave	-0.024	-0.009***	0.038**	-0.005	-0.026***
	(0.015)	(0.003)	(0.016)	(0.013)	(0.007)
Treated Wave	0.186***	0.260***	-0.191***	-0.275***	-0.085***
	(0.009)	(0.003)	(0.014)	(0.005)	(0.006)
N	621,710	900,689	126,586	260,656	735,430
Adj R-Squared	0.049	0.089	0.029	0.122	0.016
Control Wave's Mean	0.410	0.755	0.467	0.804	0.721

Table shows the reduced formed estimates of the early wave FPE on females' labor market outcomes. All regressions included person weights and cohort fixed effects. Standard errors are clustered at age level. Mean intensity is for Ghana and for Tanzania. Data from Zambia and Kenya do not support this specification due to the nonexistent number of individuals with an intensity of 0.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

...and Δ% Serv. Empl.?

	Strict Measure				
	Ghana	**Tanzania**	**Zambia**	**Malawi**	**Uganda**
Eligible*Treated Wave	0.028*	0.015*	0.017*	-0.075***	0.030***
	(0.014)	(0.007)	(0.009)	(0.009)	(0.005)
Treated Wave	-0.179***	-0.186***	-0.101***	0.185***	0.048***
	(0.009)	(0.007)	(0.009)	(0.004)	(0.005)
N	621,710	900,689	126,586	260,656	735,430
Adj R-Squared	0.043	0.057	0.043	0.077	0.010
Control Wave's Mean	0.439	0.201	0.316	0.129	0.211

Table shows the reduced formed estimates of the early wave FPE on females' labor market outcomes. All regressions included person weights and cohort fixed effects. Standard errors are clustered at age level. Mean intensity is for Ghana and for Tanzania. Data from Zambia and Kenya do not support this specification due to the nonexistent number of individuals with an intensity of 0.
$* * * \ p < 0.01, * * \ p < 0.05, * \ p < 0.1$

LM choices and Marriage market choices?

- ▶ Historical US: married women shifted time from agric back to home; families 'bought' female leisure time; falling LFPR (Ngai et al., 2024)
- ▶ India: married women with more schooling have lower LFPR; do more home production (Afridi et al., 2017)
- ▶ Does more schooling change female marriage rates in SSA?

9. FPE exposure reduces Pr(marriage) for women

Except in Tz!

	Strict Measure: Ever Married					
	Kenya	Tanzania	Zambia	Ethiopia	Malawi	Uganda
Eligible*Treated Wave	0.015	0.038**	-0.039***	-0.132***	-0.124***	-0.108***
	(0.009)	(0.014)	(0.010)	(0.016)	(0.035)	(0.016)
Treated Wave	0.053***	0.116***	0.029***	-0.063***	-0.021***	-0.020***
	(0.005)	(0.014)	(0.010)	(0.015)	(0.004)	(0.006)
N	444,861	1,217,599	329,682	867,398	407,532	973,903
Adj R-Squared	0.130	0.196	0.183	0.199	0.192	0.181
Control Wave's Mean	0.567	0.739	0.737	0.909	0.899	0.831

Table shows the DiD estimates of the early wave FPE on female marital outcomes. All regressions included person weights and cohort fixed effects. Standard errors are clustered at age level.
$*** p < 0.01, ** p < 0.05, * p < 0.1$

Consistent with related lit: FPE delays age of marriage, age of first child, reduces fertility. All consistent with *women working more!*

Collecting results

FPE exposure:

- ▶ Generates ~ 0.6 more years of schooling for women. Fees reduce investment in human capital.
- ▶ Does not promote women's work/LFPR in these African countries (c/f Duflo et al. (2024))
- ▶ Delays/reduces marriage rates among women
- ▶ Shifts female work towards services in several countries; not all "good" (paid) jobs

Interpretation (1)

- ▶ Patterns not consistent w/ more female empowerment through the labor market
- ▶ ...does not mean women are not optimising
- ▶ Recall Goldin (1995) and Ngai et al. (2024): FLFP falls along the U-shape curve. Mechanisms:
  - ▶ Income effects: Families buy leisure for women. But: marriage rates are falling....
  - ▶ Good jobs (services) take time to materialise (Vidart, 2023)
- ▶ Norms about work? Afrobarometer

Interpretation (2)

- ▶ Should we be concerned? Does lower female LFPR imply misallocation?

- ▶ Female home time may simply be $>$ productive than female market time, given current configuration of jobs and inputs for home production. e.g. India (Afridi et al., 2017), Brazil (Lam and Duryea, 1999).

Thank you!

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Bonus slides

FPE papers focus on fertility, marriage, female ed.

E.g.:

- ▶ Malawi (Andriano and Monden, 2019)
- ▶ Tanzania (Delesalle, 2021; Hoogevan and Rossi, 2013)
- ▶ Ghana (Boahen and Yamauchi, 2018)
- ▶ Uganda (Keats, 2018; Grogan, 2008)
- ▶ Nigeria (Osili and Long, 2008)
- ▶ Kenya (Lucas and Mbiti, 2012; Chicoine, 2012)
- ▶ Ethiopia (Chicoine, 2021, 2019)

7. How does men's LFPR change?

	Strict Measure				
	Ghana	**Tanzania**	**Zambia**	**Malawi**	**Uganda**
	inlabfor	inlabfor	inlabfor	inlabfor	inlabfor
Eligible*Treated Wave	-0.054***	0.103***	-0.110***	-0.006	0.048**
	(0.019)	(0.028)	(0.028)	(0.007)	(0.019)
Treated Wave	0.133***	0.113***	-0.036	-0.049***	0.006***
	(0.019)	(0.023)	(0.027)	(0.003)	(0.002)
N	718,673	1,025,990	287,683	378,302	898,085
Adj R-Squared	0.236	0.144	0.182	0.197	0.122
Control Wave's Mean	0.823	0.858	0.681	0.823	0.889

Table notes: Estimates are person weighted, include cohort FE, and SE are clustered on age. * for significance levels.

Who should get the job when work is rationed?

"Do you agree or disagree? When jobs are scarce, men should have more right to work than women." (Afrobarometer, Round 9)

Country	Men	Women
Tanzania	0.45	0.32
Zambia	0.31	0.21
Uganda	0.55	0.33
Malawi	0.34	0.31
Kenya	0.4	0.19
Ghana	0.41	0.27

Hypothesis: when women with more education compete with men for good jobs, they leave. When good jobs are more abundant, they stay (Pande and Roy, 2021). Back:Interpretation