



Does the spouse matter in the decision-making power? The direct and indirect effects of education on women's empowerment in Benin, West Africa
Mafaizath Fatoke

CONFERENCE OF THE AFRICAN ECONOMETRICS SOCIETY



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Progress on SDG 5

- Some important facts
 - The UN estimates that it will take about **300 years** at the current rate **to reach the goal 5 on gender equality**,
 - Worldwide, **nearly 50 per cent** of married women **lack decision-making power over their sexual and reproductive health and rights**,
 - **1 in 3 girls** aged 15-19 has experienced some **form of female genital mutilation/cutting** in the 30 countries in Africa and the Middle East
 - Following the coronavirus pandemic, *UN Women* informs that **victims' calls to helpline have increased fivefold** in some countries during the recent years.

Literature on women empowerment

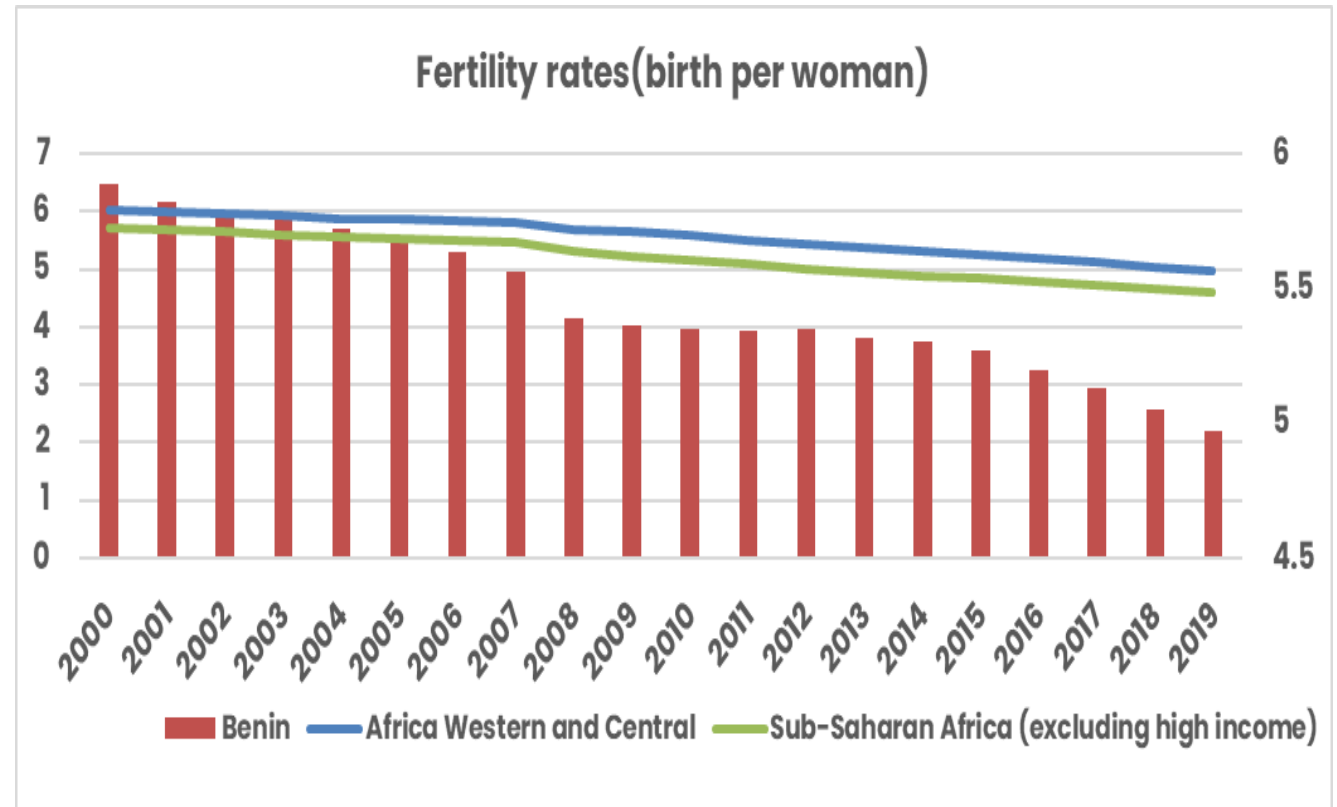
- **In theory**, women have **more bargaining power** in their households, when they have **more resources and opportunities** outside the household (education, labor, assets ownership...) [Manser and Brown (1980), McElroy and Horney (1981), and Lundberg and Pollack (1993)]
- However, **the empirical evidence** on the impact of education on women decision making power **is limited or mixed**.
 - The **difficulty in measuring the impact** of education on women empowerment stemmed from **unobservable factors** that are interrelated to both variables (Duflo, 2012).
 - Samarakoon and Panduri (2015) found that **education increased contraceptive use and promotes health practices**, but there is **no evidence that education improves women's decision-making authority**, asset ownership, or community participation.

Main contributions

- Extensive literature on impact of the **elimination of school fees** on education (Deininger, 2003; Grogan, 2008; Lucas and Mbiti, 2012a and b; Chicoine 2019; Blimpo et al., 2019;).
 - Somasse (2020) also evaluated the impact of the FPE 2006
 - But this study uses the **FPE 2006 as exogenous shock** to evaluate the impact of education **on woman decision making power**
 - Particular focus on whether the **husband/spouse** matters in **this decision-making power**
- Also contributing to the very limited evidence on the causal impact of **education on women's empowerment**
- Contribute also to the evidence on the impact of **education on women's fertility**

Context of BENIN

- Young population 41.7 percent between 0-14 (2021)
- Fertility rates below average for West and Central Africa
- Also, below average for Sub-Saharan Africa
- However, fertility rate still high about 5 children per woman
- Decrease in fertility rates in recent years



The education reform: FPE 2006

- **October 2006**, the government declared **Free Primary Education (FPE)** for all children registered in **preprimary and primary public schools**
 - **6,000 newly built primary schools** between 2006 and 2013
 - 20,645 teachers were trained or hired between 2006 and 2010 (OCS, 2012)
 - 9,910 community teachers previously paid by parents were trained and contracted by the government(OCS, 2012; UNESCO-IIIEP,2014)
 - Subsidies for the enrollment of children in priority areas

Methodology

- Based on Lucas and Mbiti 2012 (a and b) and Chicoine 2019

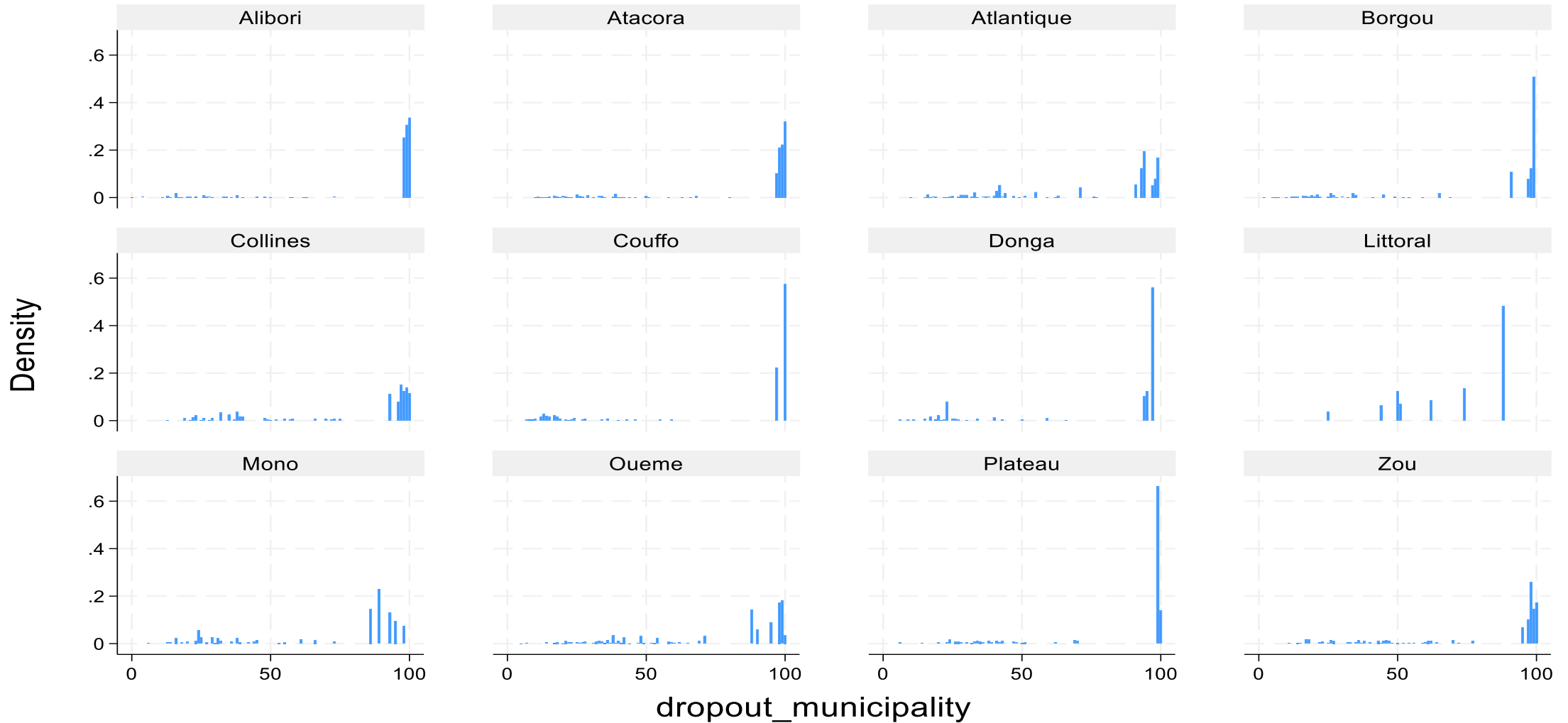
$$M_{my} = \sum_{g=0}^6 (6 - g) * f_{mg} \text{ if } y \geq 2000$$

$$M_{my} = \sum_{g=(1999-y)}^6 (6 - g) * f_{mg} \text{ if } 1988 \leq y \leq 1999$$

$$M_{my} = 0 \text{ if } y \leq 1988 \text{ (equation 2)}$$

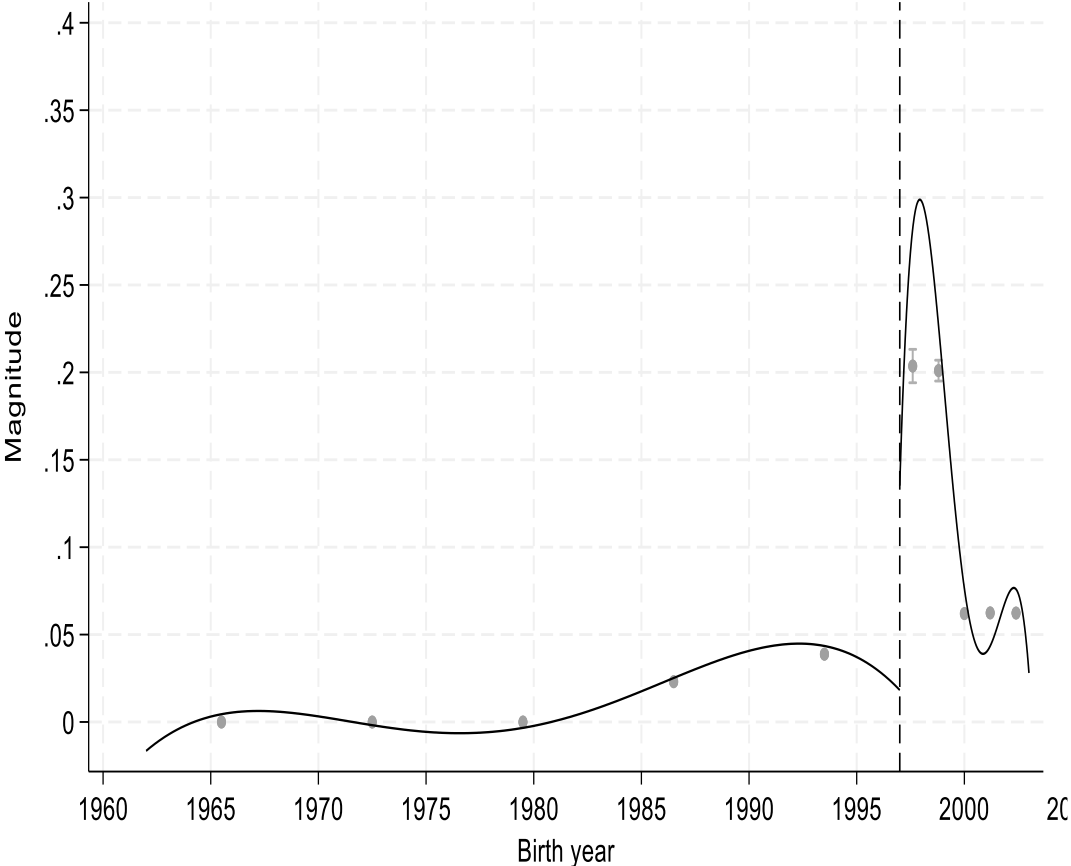
M is the magnitude of the impact by municipality and birth year; f is the intensity of the reform by municipality and grade (g)

Variations in dropout between regions/departments

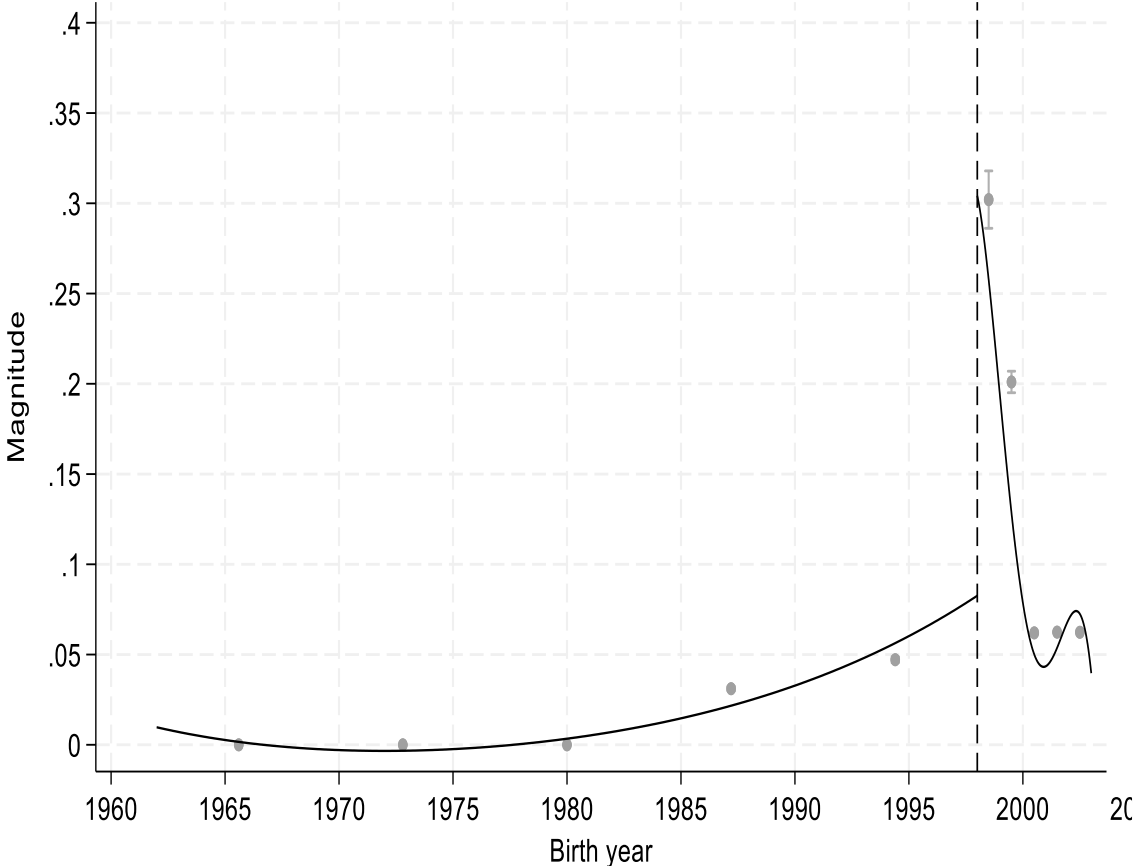


Graphs by Benin, Department 2002 [Level 1, GIS]

Magnitude of the effect



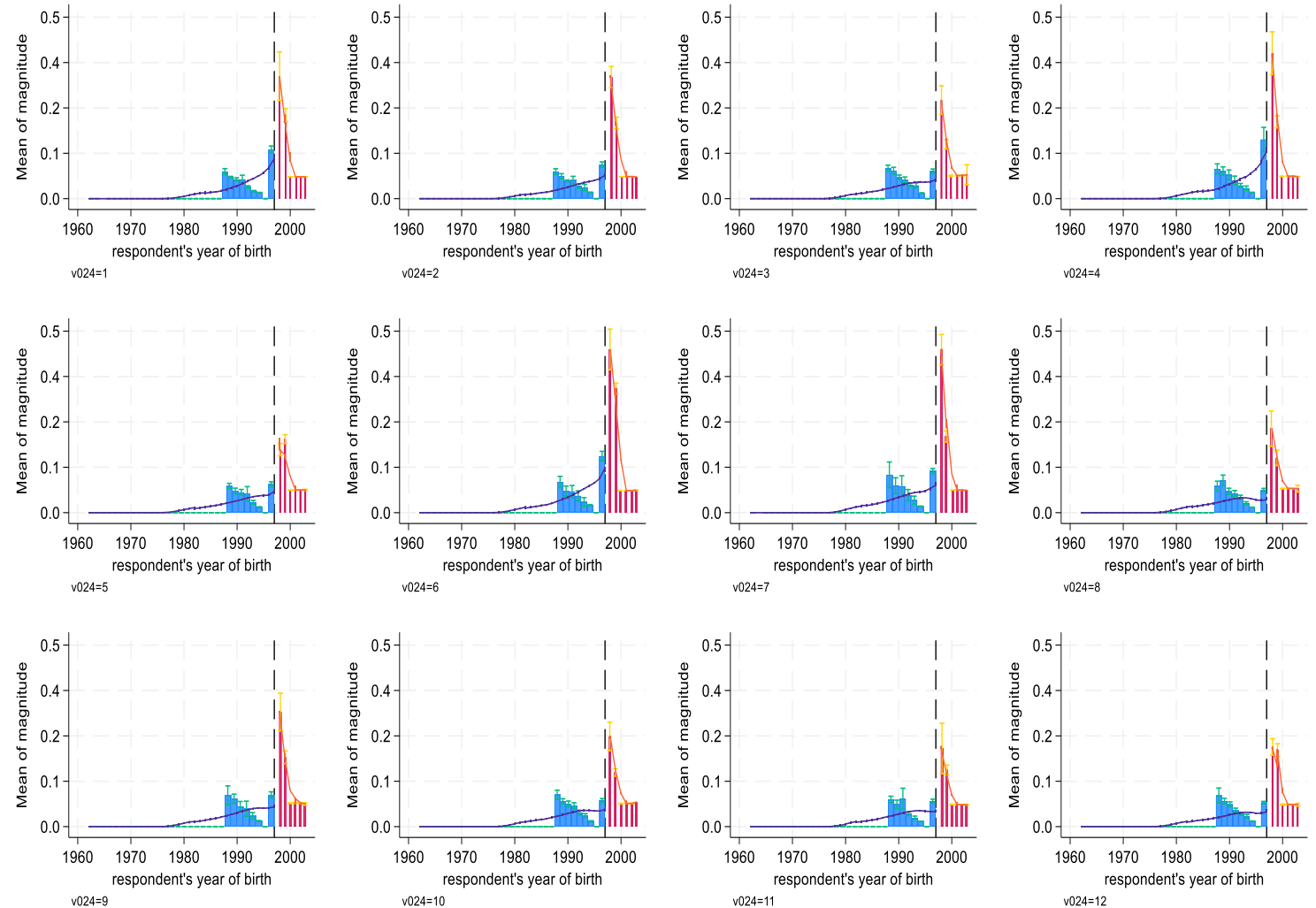
Cut off year 1997



Cut off year 1998

Magnitude of the effect by regions

- Regions with highest dropout rates have **highest magnitude**
- Magnitude of the effect started in with cohorts **born in 1988** but is highest for cohorts **born in 1997-98**



Estimation procedures (OLS)

- Based on Lucas and Mbiti 2012 and Chicoine 2019

$$E = a_1 + a_2M_{my} + a_3Birth_cohort + a_4Municipalities + a_5Years_trend + a_6X + v_1$$

- Data
 - Benin National Census 2002
 - Benin Demographic and Health Surveys, 2012, 2018
 - About 23,000 women between 15 and 49 years old

Descriptive statistics

Variables	Cohorts born between 1994-2000		Cohorts born between 1988-1993		Older cohorts born between 1988-1967	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Education variables						
Years of schooling completed	4.325	4.628	4.551	5.046	3.503	4.714
Literacy	0.158	0.364	0.135	0.342	0.050	0.219
Individual characteristics						
Age	15.411	5.664	21.955	5.584	36.847	5.515

Results on Women's Education

- Significant **increase in education outcomes**
- Significant increase in the **probability of completing secondary and tertiary education**
- Significant decrease in completion of primary education
- Significant **increase in the probability of being literate** in target population

	Years of schooling completed	Years of schooling (completed)	Complete primary education	Complete secondary education	Complete higher education	Literacy
Magnitude	6.505***	3.746***	-0.124***	0.536***	0.001	0.485***
	(0.76)	(0.61)	(0.05)	(0.07)	(0.02)	(0.07)
Basic Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Additional Covariates	No	Yes	Yes	Yes	Yes	Yes
Observations	23385	23385	23385	23385	23385	23385
R2	0.230	0.302	0.0497	0.203	0.0736	0.259

Results on Women's Fertility (1)

- Significant **increase in age at first birth** (sd of 0.58/0.68)
- Significant **decrease in the total number of children ever born**
- No impact on the probability of having a first child before 18 or 21 years old

	Age at first birth	Age at first birth	Total number of children ever born	Age at first birth before 18	Age at first birth before 21
Magnitude	1.027*	1.846***	-1.139***	-0.034	-0.023
	(0.58)	(0.68)	(0.17)	(0.07)	(0.08)
Basic Covariates	Yes	Yes	Yes	Yes	Yes
Additional Covariates	No	Yes	Yes	Yes	Yes
Observations	23385	23385	23385	23385	23385
R2	0.230	0.302	0.0497	0.203	0.0736

Results on Women's Fertility (2) / Mechanism

- Significant **increase in probability to use of modern contraception**
- No significant impact on use of traditional contraception or intent to use contraception

	Use of modern contraception	Use of modern contraception	Use of traditional contraception	Intent to use contraception
Magnitude	0.136**	0.140**	-0.010	0.080
	(0.07)	(0.06)	(0.02)	(0.08)
Basic Covariates	Yes	Yes	Yes	Yes
Additional Covariates	No	Yes	Yes	Yes
Observations	23385	23385	23385	23385
R2	0.0291	0.0315	0.0347	0.0587

Results on Women's Fertility (3) / Mechanism

- Significant **increase in age at first sexual activity**
- Significant **decrease in the probability of having the first sexual intercourse before age 15**
- Significant **increase in having first sexual intercourse before 18**
- No significant impact on age at first union/marriage

	Age at first sex	Age at first sex	Age at first sex before 15	Age at first sex before 18
Magnitude	12.736***	3.680***	-0.229***	0.158***
	(1.31)	(1.03)	(0.07)	(0.04)
Basic Covariates	Yes	Yes	Yes	Yes
Additional Covariates	No	Yes	Yes	Yes
Observations	19339	19339	21105	21105
R2	0.304	0.480	0.202	0.165

Results on Women's autonomy (1)

- Significant **increase** in the probability of the woman being the only one to make decision about her children education.
- Significant **decrease** in the probability of the woman being the only one to make decisions about her own health/healthcare
- No impact on other variable

	Respondent decides on children's education	Respondent decides on children's education	Respondent decides on her children's health/healthcare	Respondent decides on her own health/healthcare	Respondent decides on how to spend her earnings	Respondent decides on large purchase
Magnitude	0.077*	0.059	0.043	-0.044*	0.044	-0.020
	(0.04)	(0.04)	(0.04)	(0.03)	(0.06)	(0.02)
Basic Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Additional Covariates	No	Yes	Yes	Yes	Yes	Yes
Observations	23385	23385	23385	23385	23385	23385
R2	0.230	0.302	0.0497	0.203	0.0736	0.0736

Results on Women's autonomy (2)

- Significant increase in the probability of woman and her husband making decision about her health/ healthcare
- Significant increase in probability of woman being involved in the decision for large purchase
- Significant decrease in joint decision about children education and health

	Joint decision on children's education	Joint decision on children's education	Joint decision on her children's health/healthcare	Joint decision on her own health/healthcare	Joint decision on how to spend her earnings	Joint decision on large purchase
Magnitude	-0.186***	-0.137***	-0.122***	0.108*	-0.012	0.120**
	(0.05)	(0.04)	(0.04)	(0.06)	(0.04)	(0.05)
Basic Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Additional Covariates	No	Yes	Yes	Yes	Yes	Yes
Observations	23385	23385	23385	23385	23385	23385
R2	0.644	0.678	0.659	0.148	0.0844	0.160

Results on Women's Labor market participation

- No significant impact on probability of working the last 12 months
- **Significant increase in the probability of getting paid in cash or in kind for job**

	Worked in the last 12 months	Worked in the last 12 months	Payment in cash or kind for work
Magnitude	-0.061	-0.022	0.150**
	(0.08)	(0.08)	(0.07)
Basic Covariates	Yes	Yes	Yes
Additional Covariates	No	Yes	Yes
Observations	23385	23385	23385
R2	0.171	0.184	0.288

Results on Women's decision/Husband

- Does the FPE 2006 also affects the woman choice about her choice of spouse?
- How does the spouse education or job affect her decision making?

Results on Women's choice of husband

- Significant **decrease** in prob. of having a husband with no formal education
- Significant **increase** in prob. of having a husband with primary or secondary education
- No significant impact on the age of the husband

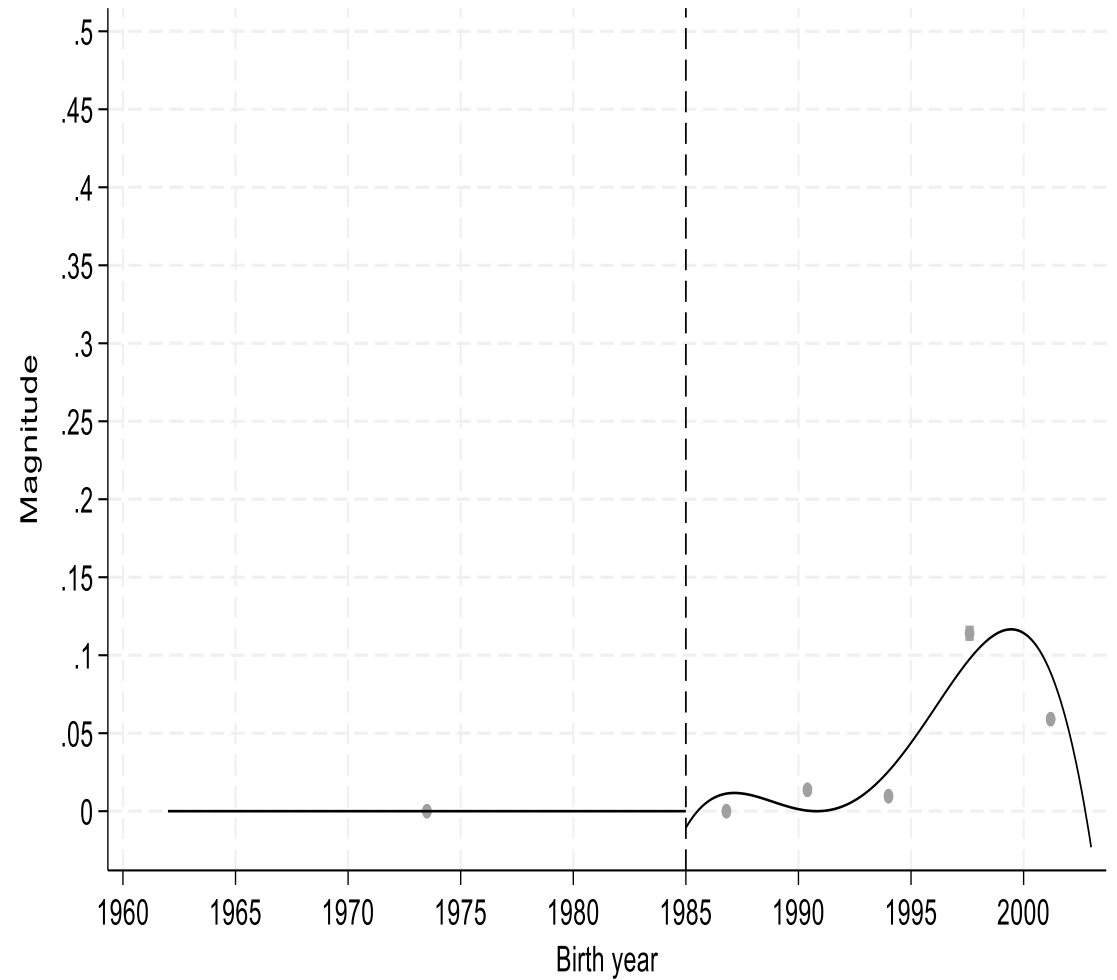
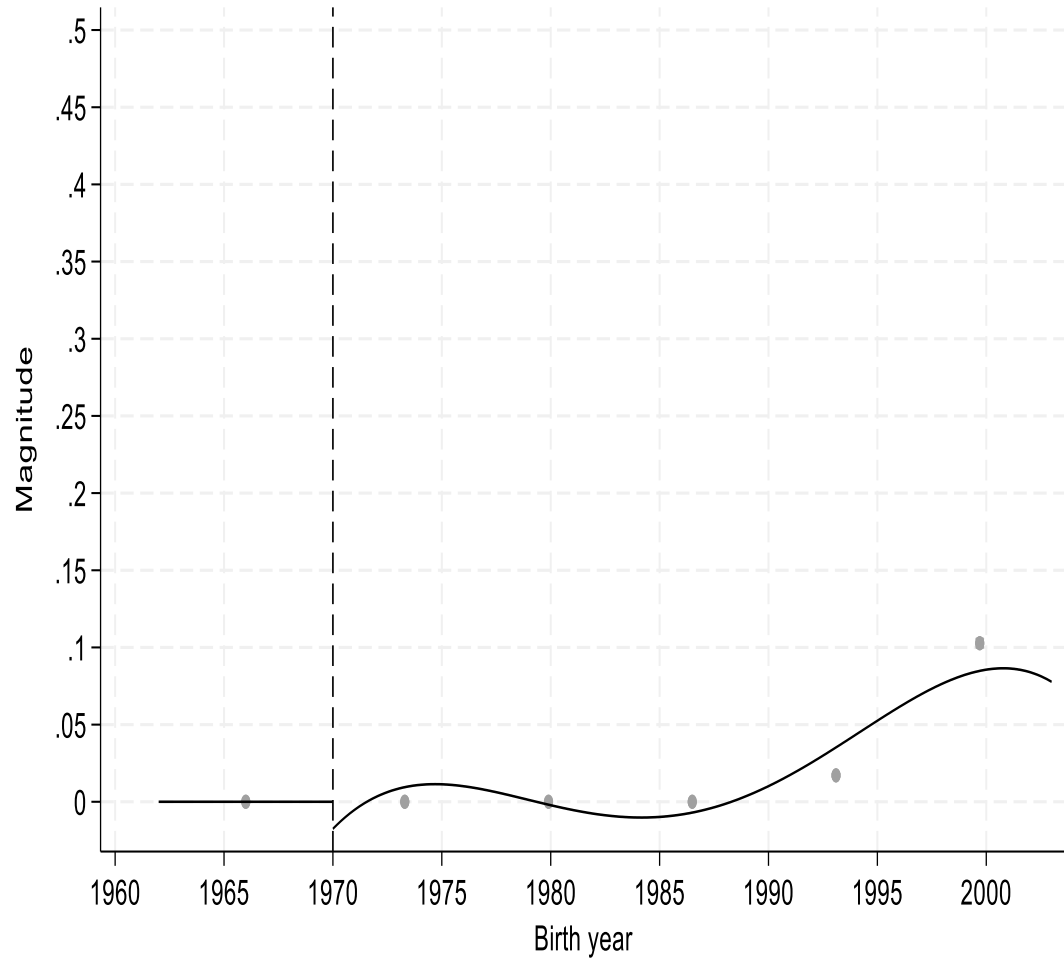
	Husband has no formal education	Husband has no formal education	Husband has primary education	Husband has secondary education	Husband has tertiary education	Husband age
Magnitude	-0.242***	-0.262***	0.127**	0.185***	0.005	-1.550
	(0.07)	(0.07)	(0.05)	(0.06)	(0.02)	(1.59)
Basic Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Additional Covariates	No	Yes	Yes	Yes	Yes	Yes
Observations	21105	21105	21105	21105	21105	15578
R2	0.274	0.300	0.0857	0.0697	0.0311	0.621

Results on Heterogeneity in impact/ Husband education

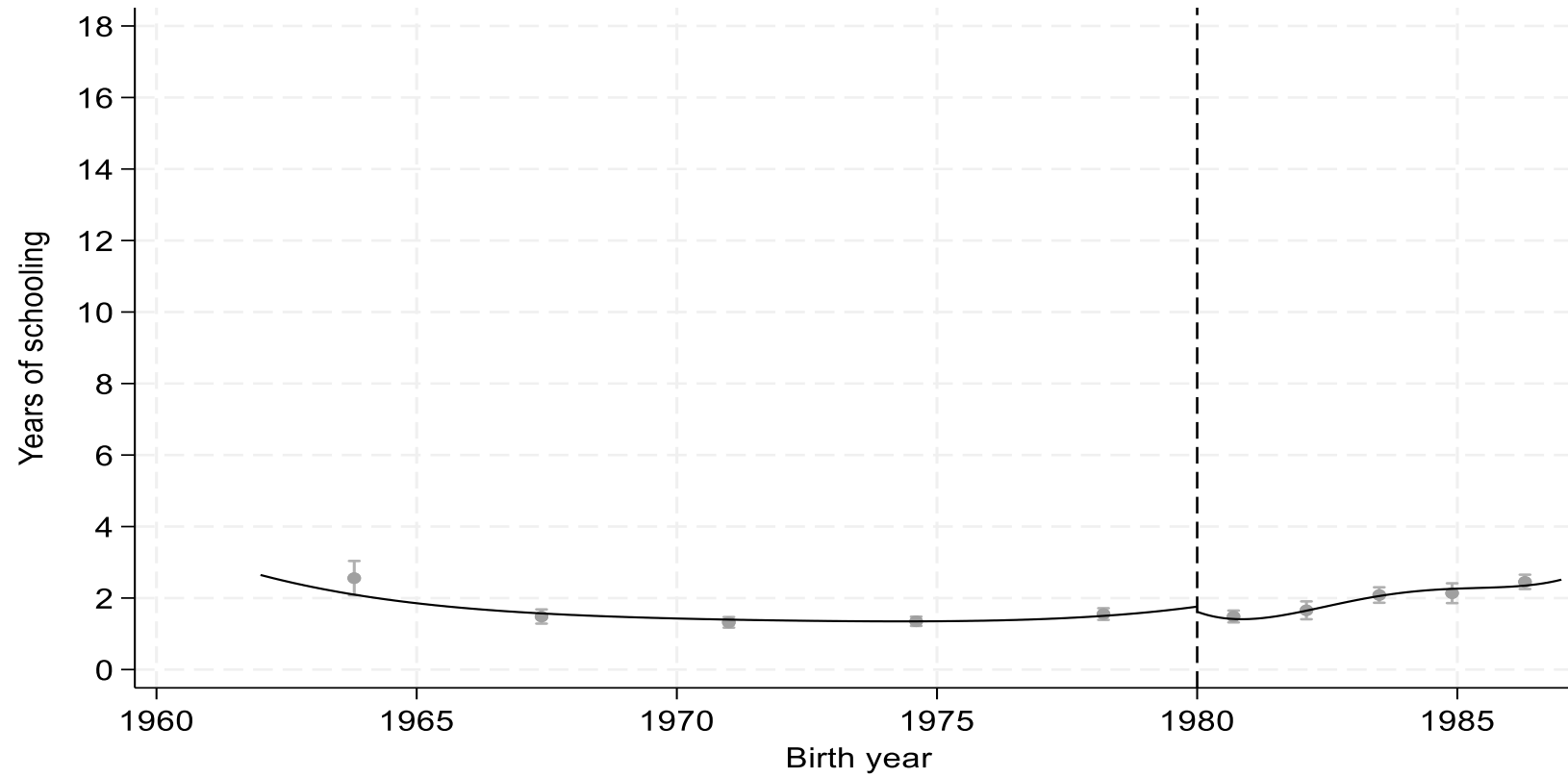
- Significant **increase** in prob. of the woman being the **only one to make decision about the children education** when husband has some education level
- **Only significant positive impact on prob. to be the main decision maker on her children health** when husband has tertiary education
- Negative impact on prob. Of being main decision maker on her earnings

	Respondent decides on children's education	Respondent decides on children's education	Respondent decides on her children's health/health care	Respondent decides on her own health/health care	Respondent decides on how to spend her earnings	Respondent decides on large purchase
Magnitude* H. Prim. Educ.	0.097*	0.076	0.095*	-0.044	-0.425**	0.033
	(0.05)	(0.05)	(0.06)	(0.09)	(0.18)	(0.10)
Magnitude* H. Sec. Educ.	0.089**	0.076*	0.073	0.057	-0.276*	-0.035
	(0.04)	(0.04)	(0.05)	(0.08)	(0.16)	(0.06)
Magnitude* H. Tert. Educ.	0.392**	0.380**	0.375**	-0.047	-0.701**	-0.073
	(0.18)	(0.18)	(0.18)	(0.22)	(0.31)	(0.16)
Observations	23385	23385	23385	23385	23385	23385
R2	0.151	0.186	0.202	0.0644	0.203	0.0551

Robustness check 1 (Falsification test 1980, 1985)

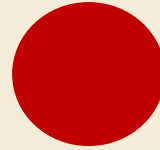


Robustness check 2 (Older cohorts)



Main results

- *Education* has significant impact on women fertility and decision-making power
- *Mechanism*: Significant increase in use of contraception, delay in age at first intercourse, and change in labor market participation
- *Does the husband matter?*: Yes/mixed, education affects the choice of husband. The impact of the reform on women empowerment is higher for female with husband with some level of education



Limitations and next step

- More robustness checks (other reforms FPE 1993, 2SLS model, ...)
- More heterogeneity analysis in birth cohorts, in wealth, ...



Thank you