Republic of Sudan Education System Reform: The causal effect on welfare of women and children

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Education of Girls in Sudan

- Girls are not sent to school because mainly they are expected to help in the household and the families who struggle with the cost of education choose to give education opportunity to their sons. Besides, lack of infrastructure and mixed gender schools discourages families from sending girls to school (UNESCO, 2009).
- Moreover, the Family Law which has been in effect since 1991 legalises child marriage and places a condition on husband to provide financial support both to his wife and his wife's family in exchange of unconditional obedience which further discourages the education of girls (Tønnessen and Roald 2007, p.22)
- Hassan (2010) indicates that Sudan is exerting great efforts to achieve good progress in primary education. However according to UNICEF MICS 2014, in 2014 27% of girls were out of school and the drop out rate in 2013 was 20.6%.

Education Reform

- Two out of eight MDGs are focused on stimulating development by educating girls. MDG 2 proposes universal education for all and MDG 3 is about empowering women and eliminating gender inequality which includes elimination of discrepancies in education too. Investing in women and empowering them economically and socially are key to development as it leads to rise in human capital.
- The former 6-3-3 system was replaced by 8 years of primary (basic) and 3 years of secondary education and the start age of 7 was reduced to 6. The 8 years of basic education was made compulsory by law bounding the individuals born from July 1993 onwards (MoGE, 2009; WDE, 2011)

The aim of the paper

To understand if the education policy in Sudan played an effective role in achieving better development outcomes such as empowerment of women and welfare of children.

Background

- Gulesci & Meyerson (2013) exploits the causal effect of compulsory schooling law in Turkey on religiosity and empowerment of women by using birth date related RDD. Their results suggest that increased years of schooling leads to women having lower religiosity, greater decision rights over marriage and fertility, and higher household wealth.
- Clark & Royer (2010) used birth date related discontinuity to analyse the two changes in British compulsory schooling laws and it causal effect on health outcomes. Despite the large positive discontinuous jump in educational attainment, their results do not suggest any significant improvement in health and mortality outcomes.
- Education could be the power that women need in Sudan to alter their suppressed role as a source of income for their family and an obedient wife. Provision of a sound education system which increases the participation of girls will speed up the development process of Sudan.

Data

The paper uses the date from UNICEF Multiple Cluster Indicator Survey (MICS) and the dataset on women which includes the ever-married and never married women aged between 15-49. The dataset provides information about the educational background of women, the position within the society, family life, fertility, life satisfaction, health issues etc. The data source proves a good opportunity to assess to what extent the developing countries are able to achieve the MDGs.

Identification Strategy

Methodology

As the law bounds up the individuals who were born from July 1993 this allows use of Regression Discontinuity Design. By the nature of setting the methodology is Fuzzy RD.

Fuzzy RDD

$$P[D_i = 1|x_i] = \begin{cases} g_0(x_i), & \text{if } x_i \geq x_0. \\ g_1(x_i), & \text{if } x_i < x_0. \end{cases} \tag{1}$$

In Fuzzy RD, the reason of discontinuity becomes an instrumental variable for treatment status (Angrist & Pischke, 2008, pp. 196).

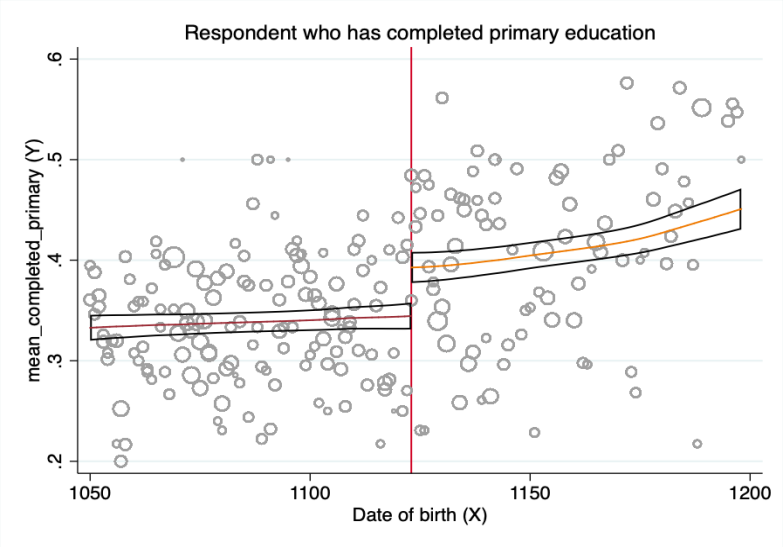
Estimation Framework

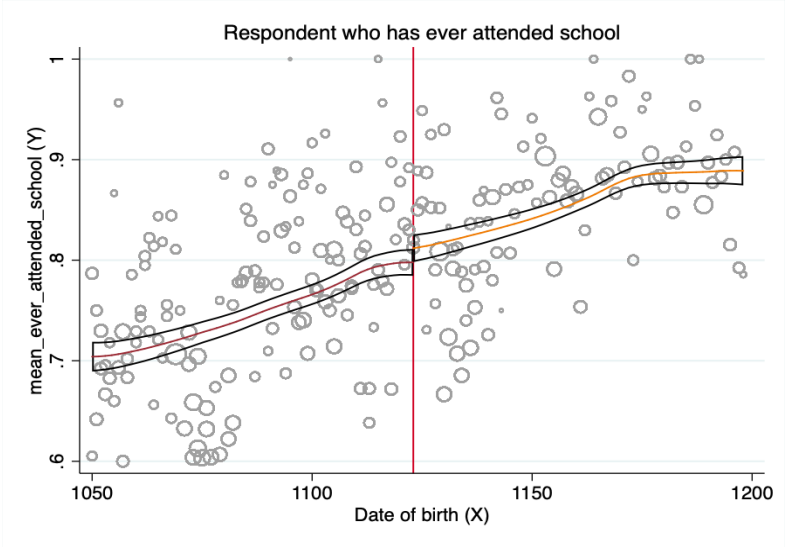
Reduced form of estimation

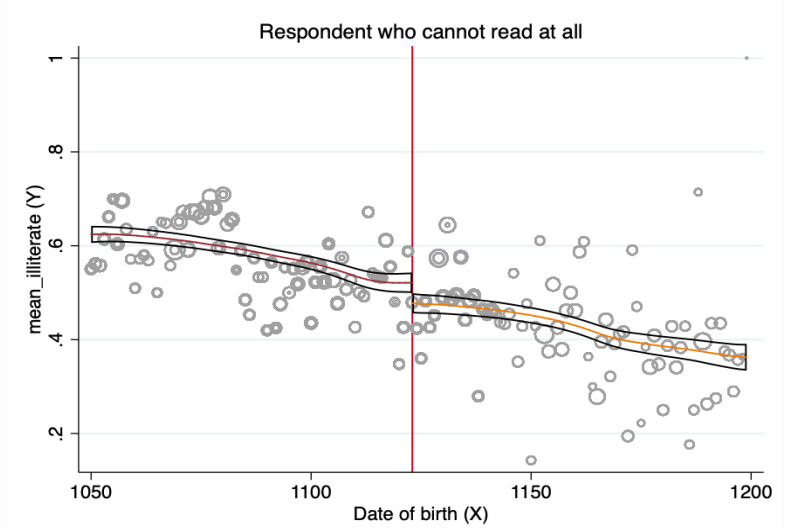
$$Y_i = \alpha + \beta_{T_i} + \underset{\cdot}{f}(x_i) + \epsilon_i \tag{2}$$

where Y_i is the outcome variable, β_{T_i} is the treatment, $\underset{\cdot}{f}(x_i)$ is the function of the running variable which is the birth date and ϵ_i is the error term.

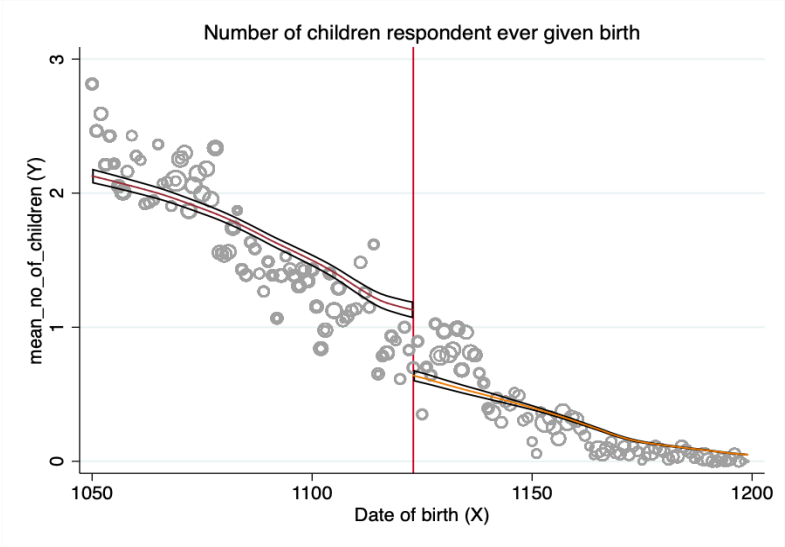
Regression Discontinuity Pathways: Education Outcomes

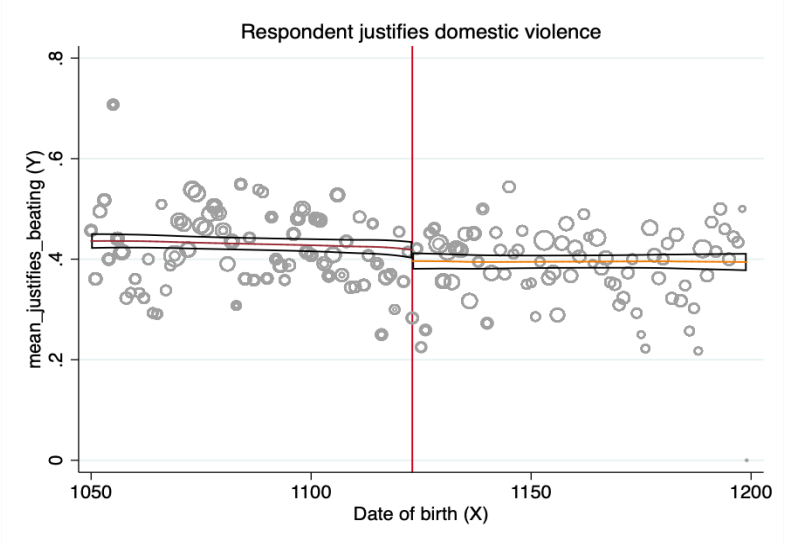




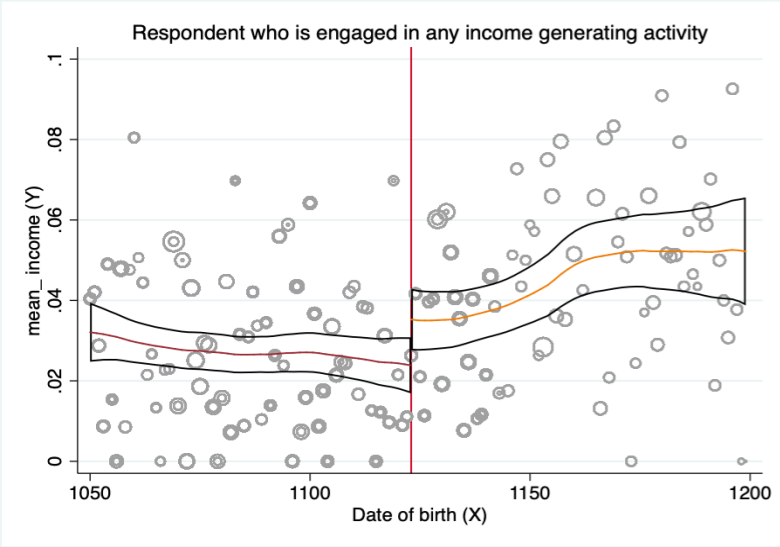


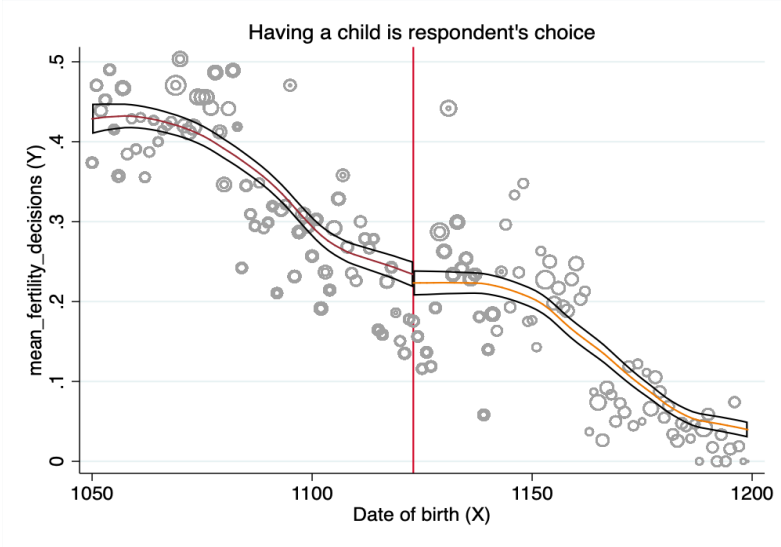
Regression Discontinuity Pathways: Welfare Outcomes



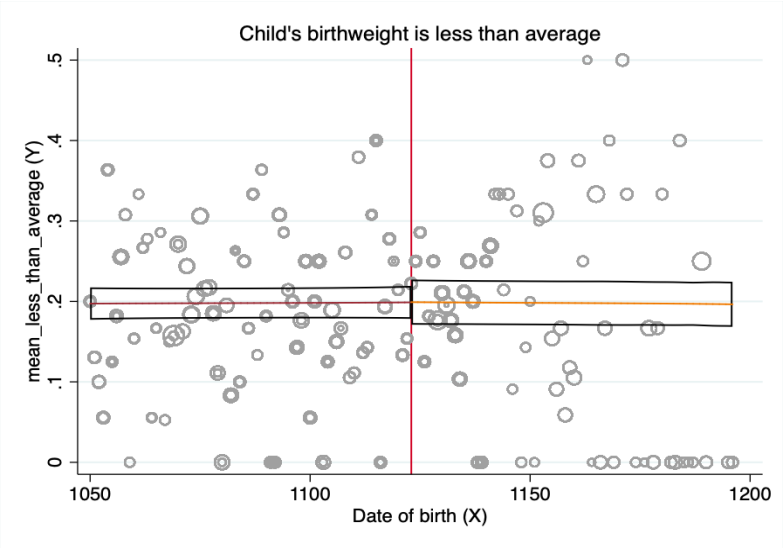


Regression Discontinuity Pathways: Empowerment Outcomes





Regression Discontinuity Pathways: Children's Well-being

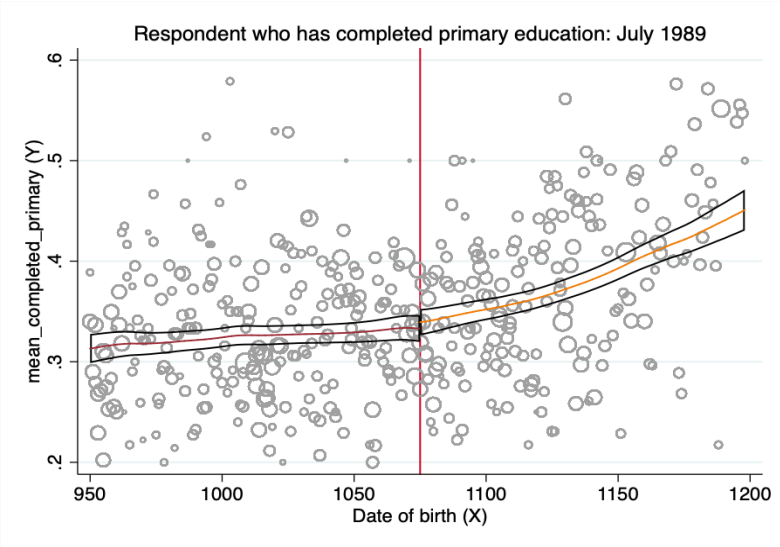


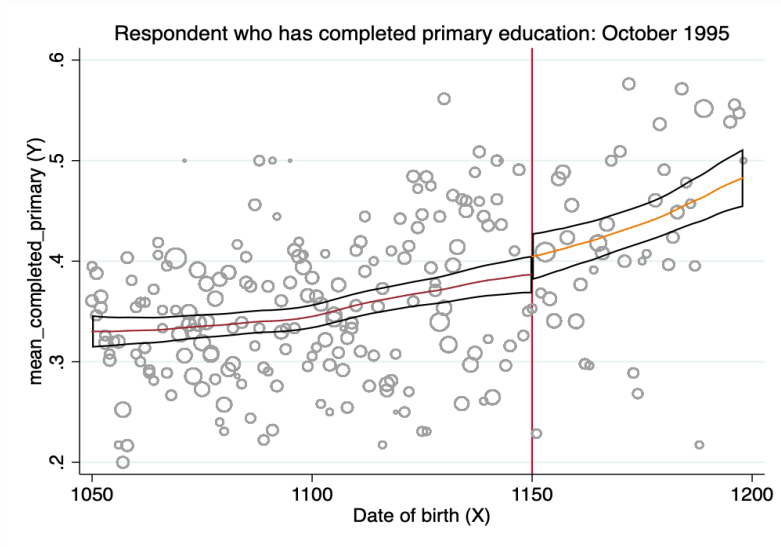
Regression Results

Local Linear Approach								
First Stage Outcomes								
Indicator	**Treatment**	**s.e**	**N**	**N left**	**N right**	**h left**	**h right**	**Sample Mean**
Completed Primary	**0.074****	**0.023**	**14349**	**1403**	**1952**	**14.909**	**14.909**	**0.375**
Ever Attended School	-0.003	0.034	14349	1169	1666	12.491	12.491	0.783
Illiterate	-0.052	0.048	9268	1335	1723	21.639	21.639	0.709
Second Stage Outcomes								
Indicator	**Treatment**	**s.e**	**N**	**N left**	**N right**	**h left**	**h right**	**Sample Mean**
Child Mortality	0.013	0.020	10260	582	997	12.480	12.480	0.073
Smaller size than av. at birth	-0.461	0.942	2453	396	508	23.974	23.974	0.139
Stunting among children	-0.340	0.510	3472	262	300	8.443	8.443	0.356
Number of Children Born	-0.101	0.142	10260	914	1275	17.621	17.621	1.073
Married before the age of 18	**-0.036***	**0.018**	**14349**	**1403**	**1952**	**14.093**	**14.093**	**0.234**
Justifies Beating	0.078	0.398	14349	1403	1952	14.475	14.475	0.352
Respondent earns income	**.102****	**0.028**	**9,687**	**764**	**1218**	**20.003**	**20.003**	**0.059**
Fertility Decisions	-0.185	0.437	14349	1284	1828	13.107	13.107	0.221

** p<0.05, ** p<0.01, *** p<0.001. Standard errors are clustered according to the running variable.

Placebo Checks





Concluding Remarks

- The aim to evaluate the education policy of the government and figure out how it can be improved.
- The policy managed to address the drop out issue which is highly complex as it occurs after children already achieve the access to education.
- This policy has to be accompanied by increased education spending such as more investment in providing access to schools along with the reforms in complementary policies such as the marriage law and prohibition of child labour.