Contraception and Girls' Education: Diffusion and Associations from Cross-Country DHS Data

Rachel Silverman

Motivation

Robust power of the pill literature from the US – important features:

- Suggests important gains among relatively elite women (those entering university/graduate school/professional career paths)

- Occurs against pre-existing backdrop of full enrollment/gender parity in primary/secondary school enrollment, women's liberation movement, rapid fertility decline, and overall high human development

- Important part of story: power to delay or optimally time first birth – not just (or primarily) to limit completed fertility

Motivation

Is there an the analogue in low and middle income countries? Important potential differences:

- Much lower baseline levels of girls' schooling and economic development/opportunity

- Wide variation in cultural norms regarding women's rights, economic participation, acceptability of contraception, and ideal family size

- Our objective today: discussions and use patterns in LMICs frequently focus on contraception for spacing or limiting, not necessarily on delaying the time of first birth
  - Does this matter?
  - Can we explore how the diffusion of contraceptive technologies for these different purposes has evolved over time, and whether it might have different implications for outcomes?

Words of Caution

- These are preliminary/exploratory analyses

- No claim of causal relationships

- Confounding and reverse causality are enormous problems without tight identification strategy

- Structure of DHS surveys/formulation of questions introduces some comparability problems that we are still working through
  - Robustness checks to date suggest issues are relatively minor for descriptive analysis...

- But – trying to understand if, how, and under what conditions contraceptive diffusion and women's economic empowerment run together

Definitions

- % using contraception before first birth

$$\frac{\text{women who reported using contraception before having their first kid } \textbf{OR}}{\text{women who reported having ever used modern contraception and have no kids at the time of the survey}}$$
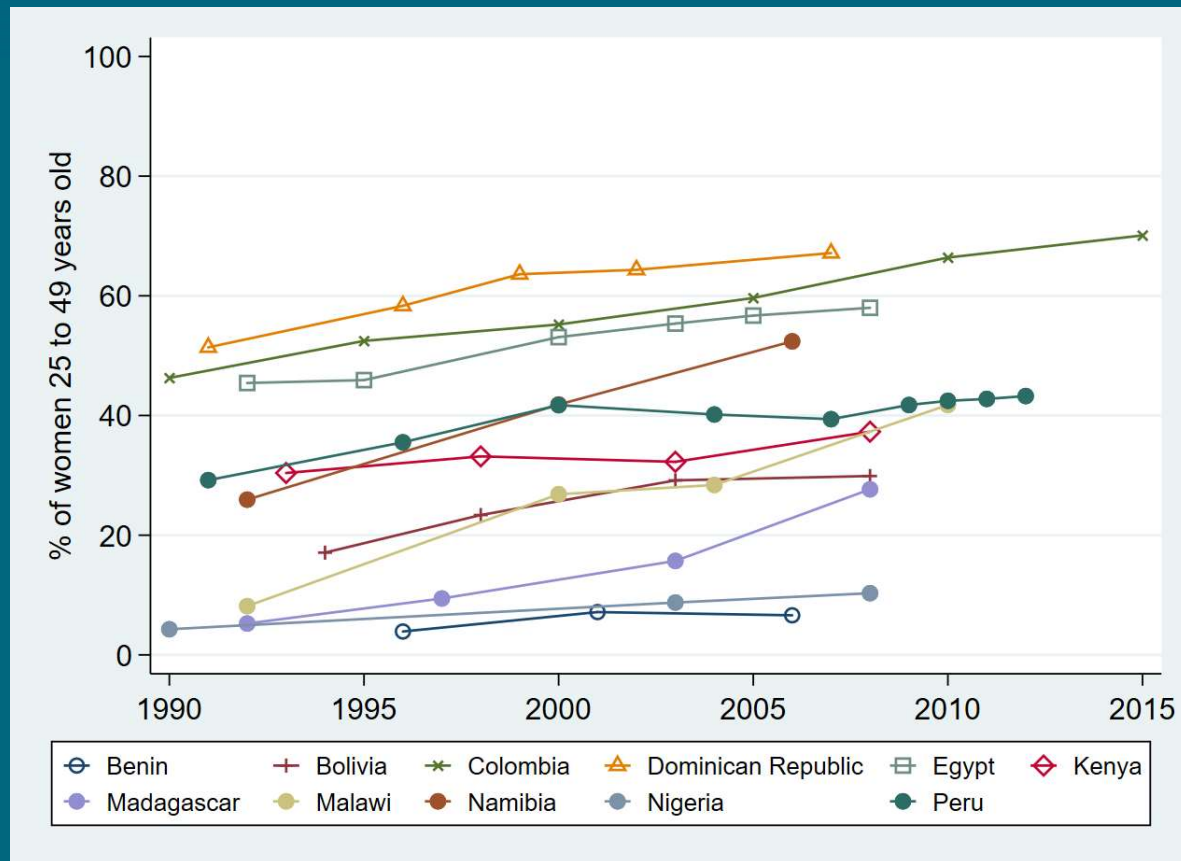$$\text{all women}$$

- % ever using modern contraception

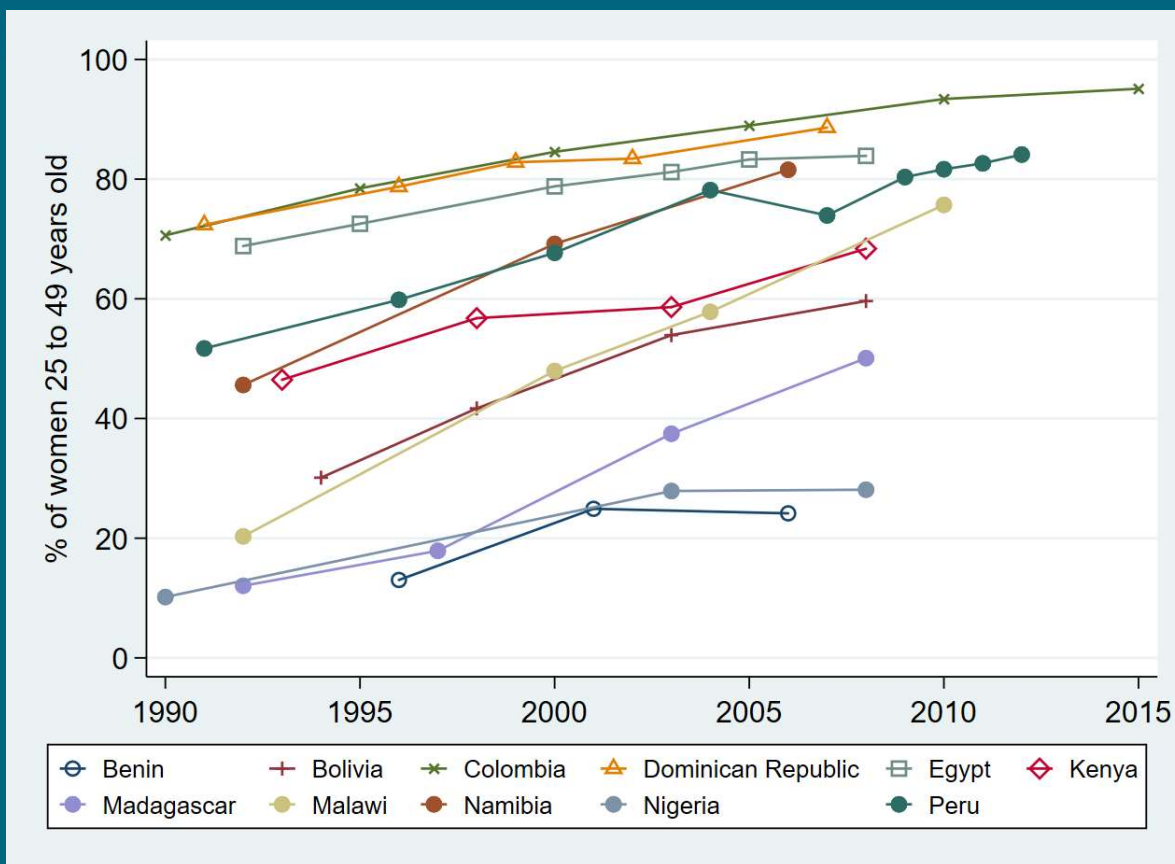$$\frac{\text{women who reported having ever used modern contraception}}{\text{all women}}$$

- % using contraception before first birth among ever-users

$$\frac{\text{women who reported using contraception before having their first kid}}{\text{women who reported having ever used contraception}}$$
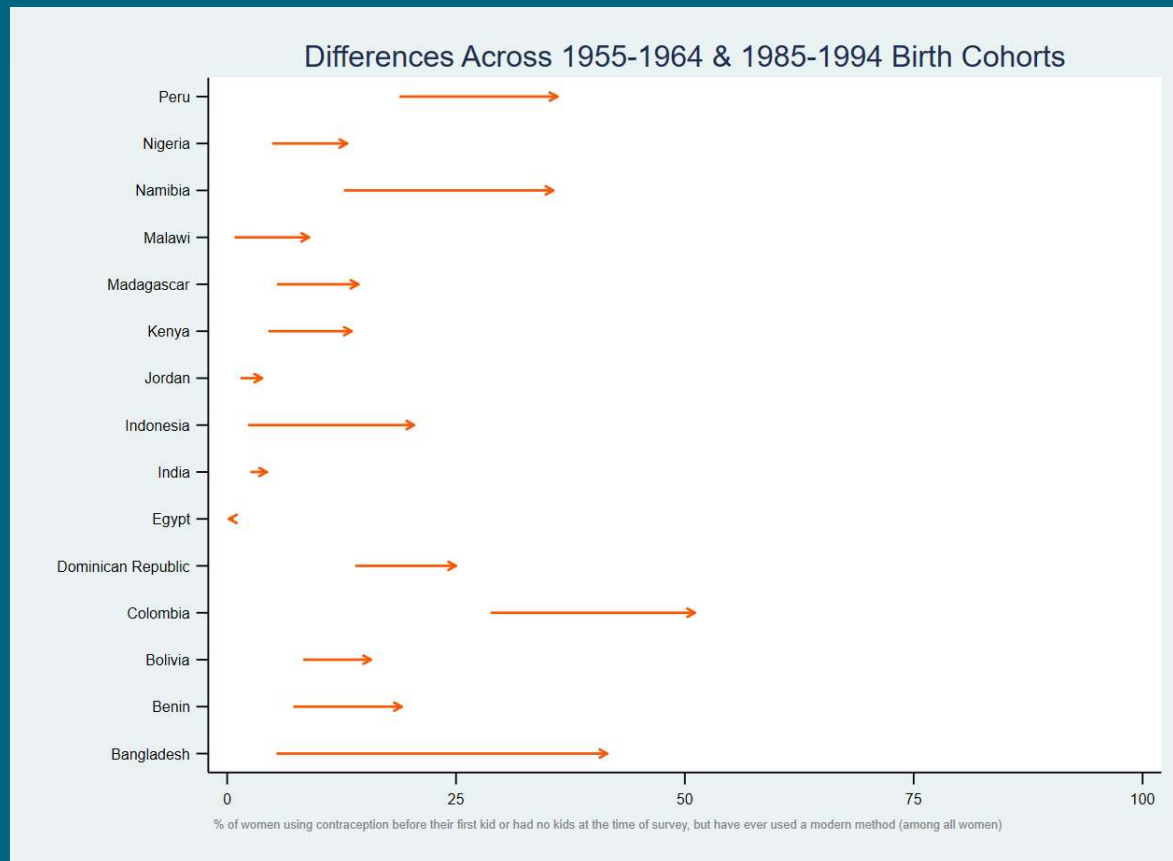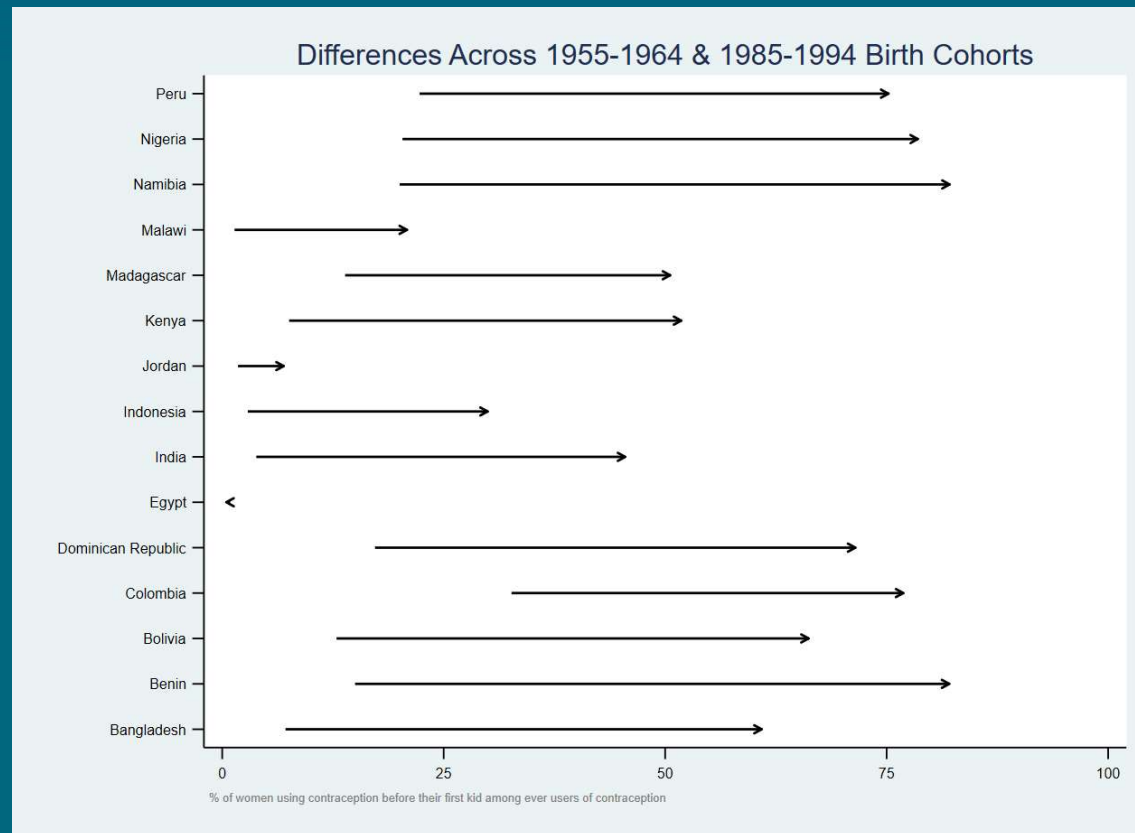
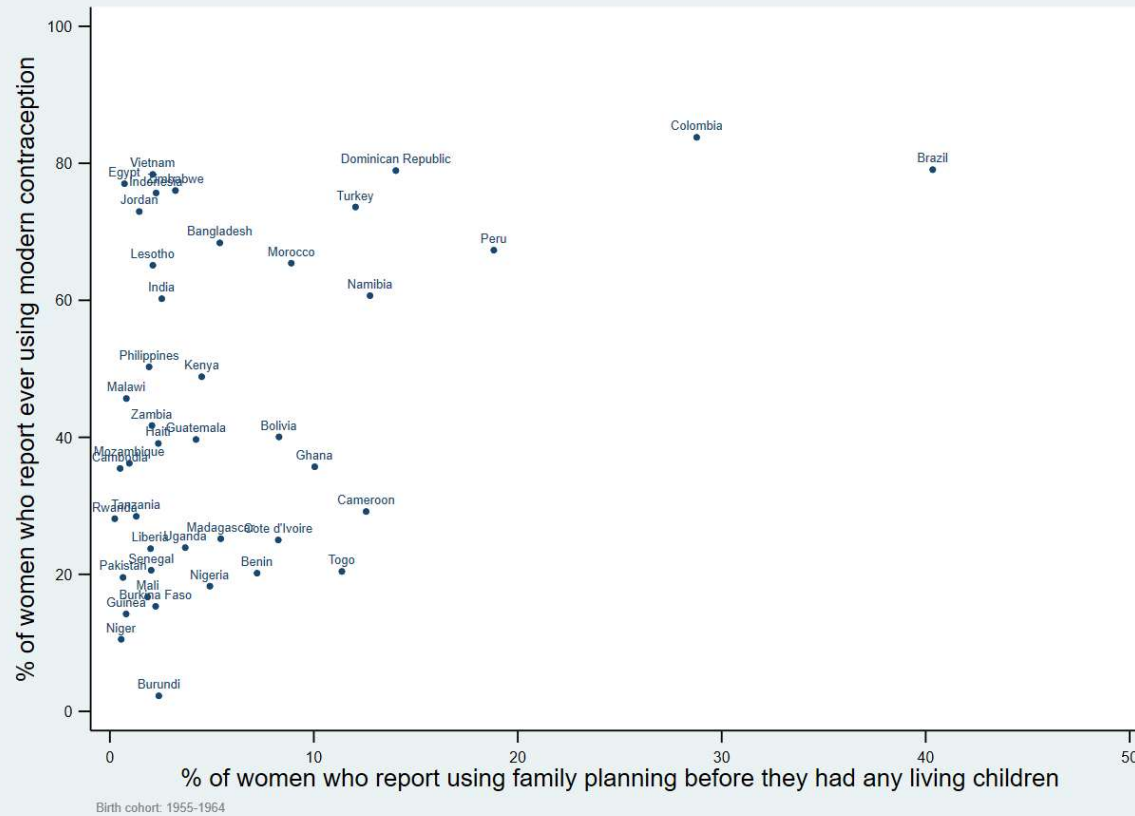# % currently using modern contraception

% ever using modern contraception

% using contraception before first birth

Differences Across 1955-1964 & 1985-1994 Birth Cohorts

% of women using contraception before their first kid or had no kids at the time of survey, but have ever used a modern method (among all women)

% using contraception before first birth (among ever-users)

Differences Across 1955-1964 & 1985-1994 Birth Cohorts

% of women using contraception before their first kid among ever users of contraception
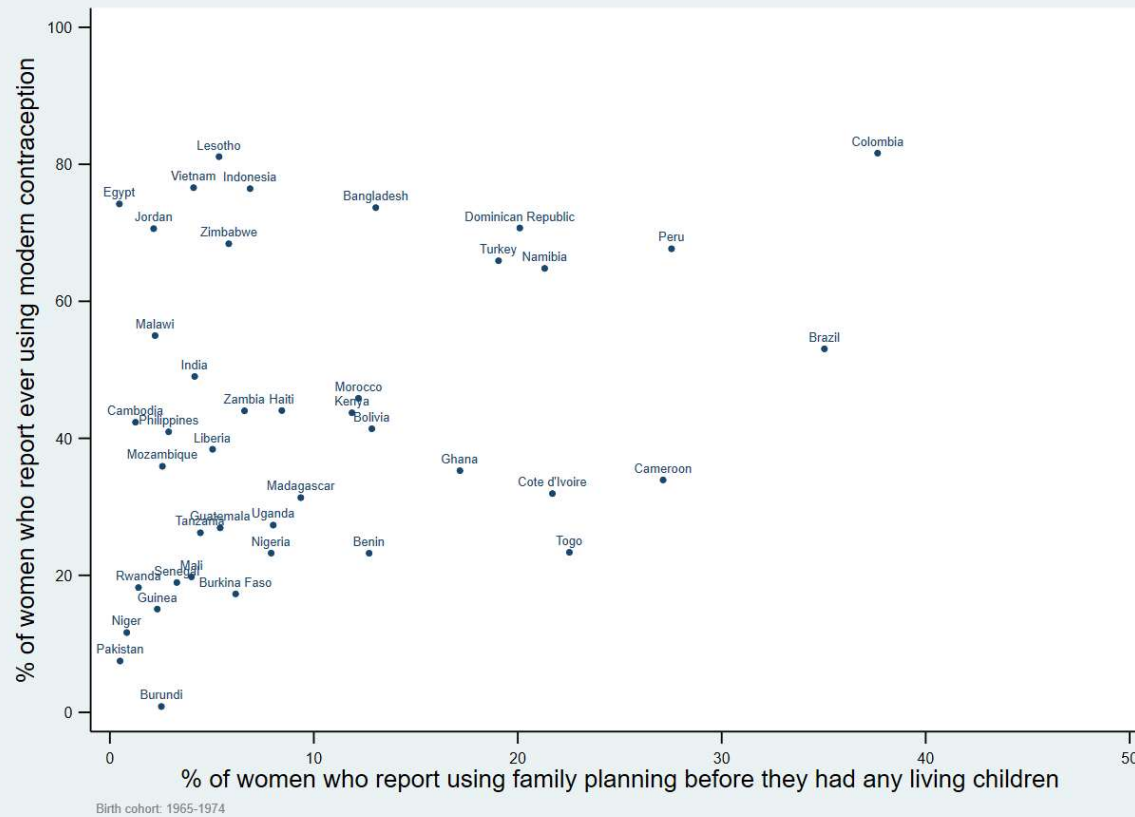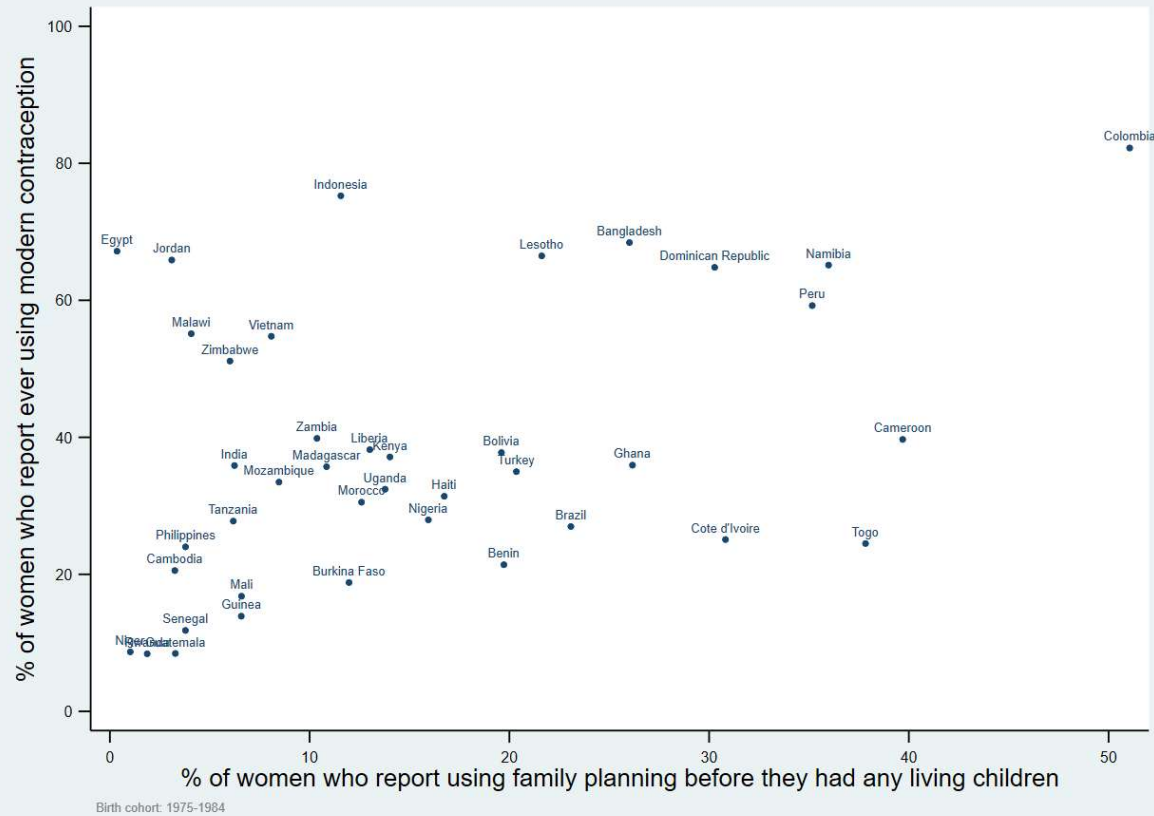
Birth Cohort: 1955-1964

Birth Cohort: 1965-1974

Birth cohort: 1965-1974

Birth Cohort: 1975-1984

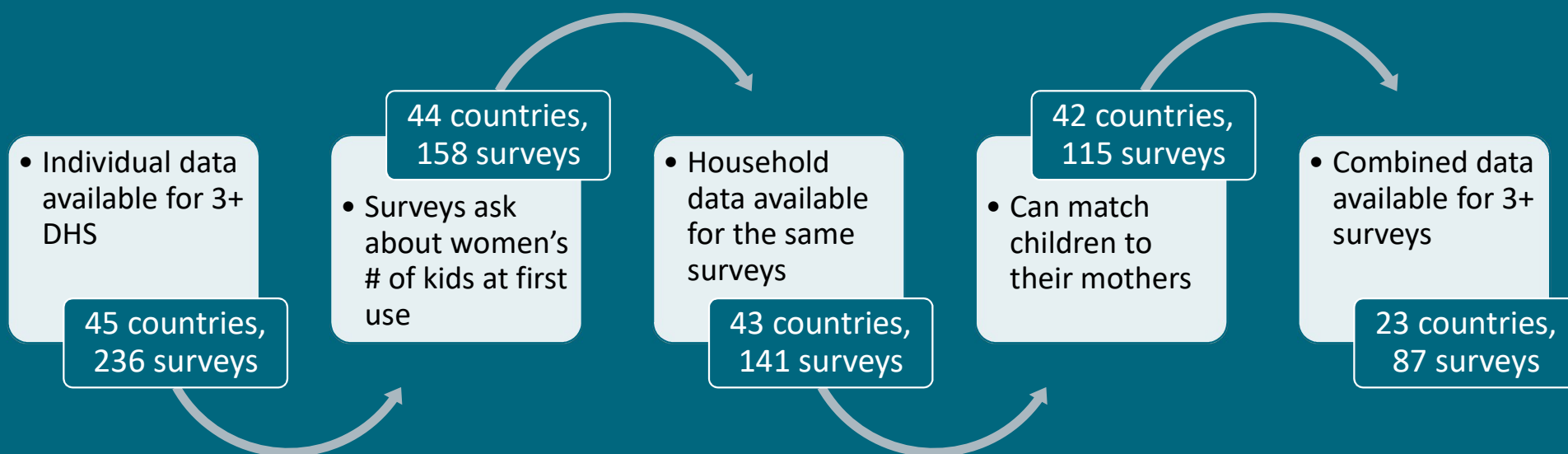# Girls' education vs. timing of use and ever use

23 countries, 87 surveys

Child-mom pairs with at least a 15-year gap in ages

	(1) girl's single years of education	(2) girl's single years of education	(3) girl's single years of education	(4) girl's single years of education
mom used family planning before she had any living children	0.529***	0.361***	0.242***	0.0180
	(8.53)	(9.58)	(10.81)	(0.50)
mom has ever used a modern method	0.420**	0.238	0.194	0.0928
	(3.14)	(1.87)	(1.45)	(0.75)
urban household		1.075***	0.467**	0.240*
		(6.16)	(2.96)	(2.08)
household wealth index score: poorest or poorer			-0.974***	-0.597***
			(-8.32)	(-6.57)
mom's single years of education				0.143***
				(9.18)
Observations	23,802	23,802	23,092	23,032
Adjusted R-Square	0.347	0.388	0.420	0.470

t statistics in parentheses
Girl is defined as a child between 10 and 17 years old
All models control for country, child's year of birth, and child's age at the time of survey
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

End.

Extra Slides

Methods and Sample: Regression Analysis

- Individual data available for 3+ DHS

45 countries, 236 surveys

44 countries, 158 surveys

- Surveys ask about women's # of kids at first use

- Household data available for the same surveys

43 countries, 141 surveys

42 countries, 115 surveys

- Can match children to their mothers

- Combined data available for 3+ surveys

23 countries, 87 surveys

Countries

1. Benin
2. Bolivia
3. Cameroon
4. Colombia
5. Dominican Republic
6. Egypt
7. Ghana
8. Haiti
9. Indonesia
10. Jordan
11. Kenya
12. Madagascar
13. Malawi
14. Mali
15. Namibia
16. Niger
17. Nigeria
18. Peru
19. Tanzania
20. Turkey
21. Uganda
22. Zambia
23. Zimbabwe