Firstborn Girls and Family Structure: Evidence from sub-Saharan Africa

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PRELIMINARY AND INCOMPLETE, please do not circulate

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This paper documents how the sex of the first child affects family structure in sub-Saharan Africa. Using DHS data, we study the impact of the gender of the first child on the likelihood of having an absentee father, the probability of ever been married, being in a polygamous relationship and remaining married in sub-Saharan Africa. Next, we combine these data with information on ancestral anthropological and cultural practices of the ethnic group to which the woman belongs. This will allow us to relate the effect of the gender of the first child to traditional practices.

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1 Introduction

Most societies exhibit some degree of son preference (Williamson 1976). Much has been written on the roots and consequences of son preference in South and East Asia. Recent studies in India for instance have shown that a child's gender affects future fertility (Jayachandran and Kuziemko 2011), sex-selective abortion (Anukriti, Bhalotra, and Tam 2016), and sex differences in parental time inputs, as well as access to health care and nutrition (Rose 1999; Jayachandran and Kuziemko 2011; Jayachandran and Pande 2017). Even in high-income countries, children's sex can impact family structure through changes in marital formation, divorce, and custody arrangements (Lundberg and Rose 2003; Lundberg, McLanahan, and Rose 2007; Dahl and Moretti 2008; Ichino, Lindstrom, and Viviano 2014; Blau et al. 2017; Kabátek and Ribar 2020).

An emerging literature also provides evidence of son preference in sub-Saharan Africa. A number of countries in North, West, and Central Africa have substantially elevated desired sex ratios (Bongaarts 2013). Though there is little evidence of missing girls at birth, Anderson and Ray (2017) show non-negligible amount of excess girl mortality in Africa, except for Southern Africa. Looking at birth spacing, Rossi and Rouanet (2015) reveal evidence consistent with strong son preference in North Africa and none in South Africa while Norling (2018), looking at fertility patterns, stresses heterogeneity in gender preferences. But much less is known about the effects of son preference on family structure. Dahl and Moretti (2004) (in their working paper) looking at Kenya, and Milazzo (2014) at Nigeria, found that women with a female firstborn have more children, are more likely to be separated, and more likely to end up in a polygamous union. In Senegal, Lambert, de Walle, and Villar (2017) describe how female divorcees with a son from a previous union have a lower remarriage rate.

This paper assesses the effect of a child's gender on family structure in sub-Saharan Africa. First, we first ask whether girls and boys live under similar family arrange-

ments. We use data from over a 100 DHS surveys from more than 30 countries. We document that girls are overall less likely to live with their father. Girls are a bit more likely than boys to live with their mother and no father, but are much more likely to live without either parent. Naturally, if gender preferences affect fertility choices, family with girls could be very different from families with boys. As a result, we turn our focus towards the gender of the firstborn child since sex-selective abortion is generally not a concern in sub-Saharan Africa (Anderson and Ray 2017; Chao et al. 2019). The identification strategy consists of treating the sex of the firstborn child as an exogenous event, at least among young women where differential mortality based on children's gender composition is not a concern (Milazzo 2014).

First, we document that female firstborn children are as likely as male firstborns to be living with their mother. But, when we analyze women whose first child was born before marriage, we find that these women are, if anything, less likely to get married in the short run, but more likely to marry in the long run when their firstborn child was a girl instead of a boy. In addition, mothers of an out-of-wedlock female firstborn are less likely to end up marrying the father of the firstborn child. Next, we show that women whose first child was born after marriage are more likely to divorce or separate if the firstborn is female, and they are also more likely to be in a polygamous marriage.

The results of this paper have both methodological and welfare implications. A large body of research has focused on documenting birth order effects and understanding heterogeneous patterns based on offspring's gender composition. Our results suggest that any attempt to establish causal links between the gender of older siblings and younger children's outcomes need to account for the possibility of sample selection due to family structure, or acknowledge it as a potential mechanism mediating the results. For instance, imagine that having a female eldest sister is positively correlated with younger sibling's educational attainment and we want to attach a causal interpretation, given the presumed exogeneity of the firstborn's gender. But, suppose that having a female firstborn child increases the probability of divorce

or polygamy, children are more likely to live with the mothers, and the survey of interest, as it frequently occurs, only registers sons and daughters who live with the head of the household (who are primarily male). Then, any OLS model would be biasedly estimated if the parental characteristics that increase the probability of divorce or polygamy when the first child is a girl are correlated with younger sibling's educational outcomes (e.g., parental time inputs, gender attitudes, etc.). Similar concerns could arise in research aiming to study the effect of children's gender on parents' outcomes such as gender attitudes.

From a welfare perspective, studies in developed countries show an advantage in terms of educational and economic outcomes for children raised in homes with two married biological parents compared to children raised in single-parent homes (see Kearney and Levine (2017) for instance). In Africa, however, child fostering is a common practice and can even be viewed as beneficial. There is suggestive evidence that fostering is a response to demand for child labor (Ainsworth (1992) in Côte d'Ivoire, Milazzo (2014) in Nigeria), but also that fostering can be a form of schooling investment or a response to economic shocks (Akresh (2009) in Burkina Faso, Zimmerman (2003) in South Africa). Penglase (2020) finds little evidence of intra-household consumption inequality between foster and non-foster children in Malawi. The overall effect of fostering on education and living standards seems therefore ambiguous and context-specific.

However, there is evidence that family structure matters for adults' and children's wellbeing. Brown and van de Walle (2019) find higher rates of poverty among female headed households, especially if the female head is unmarried (Brown and van de Walle 2019). The price of being unmarried is particularly high for women: Anderson and Ray (2015) find significant excess female mortality among unmarried in Africa. Van De Walle and Djuikom (2018) find lower nutritional status among Africa's widows and divorcees relative to married women in their first union.

The effects described above are an average effect as a result of pooling all countries

together. Our paper also looks at the effects of the gender of the first born country by country and uncovers substantial heterogeneity. Our next steps will be to investigate the source of heterogeneity across countries. Recent work has emphasized the role of traditional norms, from dowries to discriminatory inheritance laws, as factors exacerbating son preferences (Jayachandran 2015). Rossi and Rouanet (2015) find that traditional kinship structure predicts the nature of preferences: son preference prevails in patrilineal ethnic groups only. The consequences of separations are also likely to be less important in matrilineal societies. In patrilineal societies, wives are irrelevant for the determination of lineage or inheritance. In patrilocal societies, married couples reside with or near the husband's parents. Both norms reduce women's ability to rely on their own kin group in the case of separation. Since inheritance and group membership are passed through female members in matrilineal societies, women tend to be more empowered. Indeed, Lowes (2018) finds lower domestic violence, and better health and education outcomes for women, and Brule and Gaikwad (2018) find a higher political participation by women and lower gender gap in matrilineal societies. On the other hand, Lowes (2018) finds lower cooperation between matrilineal spouses, and, in both matrilineal and patrilineal, sons are favored for inheritance. Recent work has also highlighted the role of traditional agricultural practices. Alesina, Giuliano, and Nunn (2013) empirically test Ester Boserup's hypothesis that differences in gender roles are determined by historical agricultural practices: in societies traditionally based upon plough agriculture, women participated less in agricultural production and female labor participation is lower today. Alesina, Brioschi, and Ferrara (2016) find that domestic violence is also higher in societies traditionally based upon plough agriculture.

2 Empirical Strategy

2.1 Data Sources

We use Demographic and Health Surveys (DHS) conducted by USAID post 1994 in 34 sub-Saharan African countries for a total of 104 DHS surveys. Table A1 presents the list of DHS waves used in the analysis.

The Household Questionnaire collects data on the characteristics of the household and lists all household members in a roster along with their key characteristics. The Woman's Questionnaire administered to women age 15-49, in addition to questions about the woman, contains a birth history that is used to list all children (alive or dead) that the respondent has given birth to, with the child's sex, date of birth, age, and survival status. We include every woman who has ever given birth and whose age at first birth is above 11. Table A2 presents summary statistics on the women included in the regression samples.

The information on subnational administrative areas come from the DHS geographic data and GIS data available at DIVA-GIS. Many of the DHS surveys include GPS data consisting on the geographical coordinates of the DHS clusters. The location is randomly displaced by 0 to 2 km for urban clusters and 0 to 5 km for rural clusters.[1] We match the households' location to specific geographic areas by country using the Stata function *geoinpoly*. We have used controls for the first administrative area available by country. Table A1 summarizes the share of non-missing administrative area observations by country.

Whenever available, we have used women's ethnicity information and merged it with the University of Zurich's Atlas of Pre-colonial Societies data.[2] The data about traditional practices by ethnic groups and countries also come from this source. This is an update of Murdock's *Ethnographic Atlas* with ethnographic information for 1,267 ethnic groups and contains over one hundred ethnographic variables taken

[1] https://dhsprogram.com/What-We-Do/GPS-Data-Collection.cfm

[2] The data cleaning process of the ethnic information is still ongoing and more ethnic groups will likely be available in future versions of the draft.

from societies prior to industrialization. Table A1 summarizes the share of non-missing observations by country. We are grateful to Alessandra Voena for sharing with us a merge file between the ethnic groups in the DHS and the University of Zurich's Atlas of Pre-Colonial Societies.

2.2 Identification Strategy

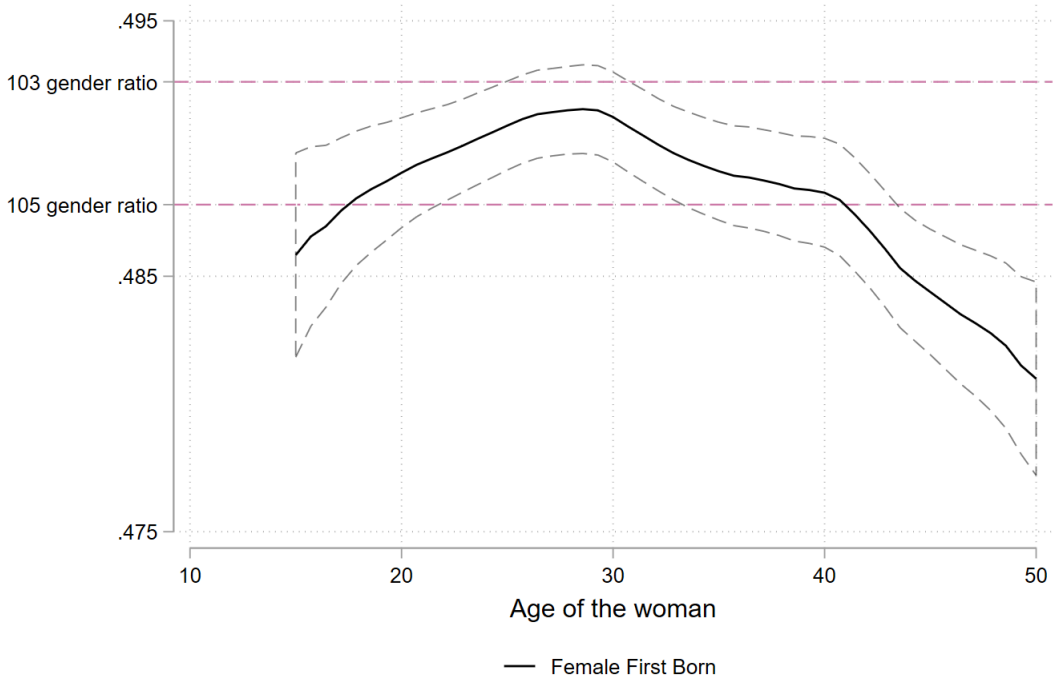
This identification strategy of this paper relies on treating the sex of the first born child as a random event. Ichino, Lindstrom, and Viviano (2014) fail to reject that the gender of the firstborn is endogenous in a subset of high-income countries (US, UK, Italy and Sweden). But things may be different in developing countries. In particular, we may worry about two potential sources of endogeneity: selection at birth and selection into the sample.

A first threat to identification could come from sex-selective abortion. This is generally not perceived as much of a concern in sub-Saharan Africa. In a large comprehensive exercise, Chao et al. (2019) finds that sex ratios at birth are not significantly different from the commonly assumed historical norm of 1.05 in sub-Saharan Africa (see also Anderson and Ray (2017)). To see if this is an issue in our data we look at the sex ratios. In appendix, we plot the sex ratio of the first born child by the child's year of birth across countries and survey waves (Figure A1). We see that the sex ratio (male/female) has decreased over time also for the first born child but has stabilized around the natural ratio (103-105) since the 90s. Of course, heterogeneity across birth cohorts and countries exists and robustness checks will take this into account.

The second potential threat comes from selection into our sample due to selective mortality of women. If having a girl results in outcomes that have negative consequences for women's health (such as lower birth spacing or higher likelihood of being unmarried), this could result in higher mortality rates among women with a female firstborn. In Nigeria, Milazzo (2014) finds evidence of selective mortality in data

from the 2008 DHS. In rural Tanzania, Genicot and Hernandez-de Benito (2021) find evidence of less women above 40 years old with a female first born. This is indeed a concern in our DHS sample. Figure 1 plots the probability of a female first born against the age of the woman. We see that for women below 40 the proportion of female first born is not significantly different from the expected ratio (0.487-0.492). However, selective mortality seems to be a concern among women over 40 years old. To avoid this issue, in what follows we will systematically replicate our analysis limiting the sample to women under 40 years old, and heterogeneity across surveys will be taken into account throughout robustness checks.

Figure 1: Female first born by Mother's Age



Finally, an interesting question arises regarding the survival of the firstborn child. In the sample, the firstborn child was not alive at the time of the survey for 16% of the women. In the presence of gender preference in children, children mortality could itself be an outcome of interest (Rose (1999)). In this case, one should not control for it. On the other hand, a child's death can have an effect on some of the marital outcomes that we are interested in. Moreover, boys are more likely to

die than girls. In this case, not controlling for whether the first born child is dead or alive would be a source of omitted variable bias. Hence in what follows we will systematically run a specification with and without controlling for the death of the first born. It is also possible that some of the effects of the child's gender that we are studying work only through children that are alive. In this case, the death of a child will have different effect depending on the gender of the child and we will need to control for the interaction of the death and the gender of the first born. This will be relevant for longer term outcome such as divorce and we will do so when needed. Additionally, we check whether the results are robust to limiting the sample to women whose firstborn child is still alive.

3 Who do girls and boys live with?

3.1 Basic Descriptive Statistics

We start by asking who do girls and boys live with? To answer this question, we use the DHS household rosters and consider all kids under the age of 12. We limit the exercise to kids below 12 years old as they are not yet in age to get married. Otherwise, the comparison would be in part affected by gendered ages of first marriage and the patrilocal (matrilocal) norms where women (men) are more likely to leave the household after marriage.

Table 1 presents summary statistics. Notice first is that there is little correlation between the gender of the child and the likelihood of either parent to be dead. Second, we see that girls are slightly more likely to have an absentee mother (14.8% for the girls and 13.8% for the boys), and more likely than boys to have an absentee father (28.7% for the girls and 26.5% for the boys). Overall, they are about 2% more likely to have both parents absent. Unsurprisingly, this also means that girls are more likely to be living in smaller households with male adults and slightly more

Table 1: Children Statistics by Gender Based on HH roster

	Female	Male	Δ	p-value	Obs.
Age	5.3029	5.3077	–0.0048	0.3663	2,364,037
Both parents dead	0.0072	0.0068	0.0004***	0.0057	2,364,037
Dead father	0.0514	0.0514	0.0000	0.9228	2,364,037
Dead mother	0.0230	0.0230	0.0001	0.8140	2,364,037
Both parents present	0.6860	0.6994	–0.0133***	0.0000	2,197,920
Mother absentee (mother alive)	0.1481	0.1383	0.0099***	0.0000	2,306,053
Mother only absentee	0.0313	0.0385	–0.0073***	0.0000	2,197,920
Father absentee (mother alive)	0.2874	0.2659	0.0215***	0.0000	2,236,161
Father only absentee	0.1722	0.1691	0.0031***	0.0000	2,197,920
Both parents absent	0.1105	0.0930	0.0175***	0.0000	2,197,920
Family size	7.7380	7.7915	–0.0535***	0.0000	2,364,037
No. adults	2.9933	2.9971	–0.0038	0.2451	2,364,037
No. male adults	1.2897	1.2991	–0.0094***	0.0000	2,364,037
No. female adults	1.7036	1.6980	0.0056***	0.0051	2,364,037
Female head hh	0.0000	0.0000	0.0000**	0.0112	2,364,037

likely to be living in female headed households.

To assess how these patterns hold by country, we run a regression on the probability of having both parents absent, living with the mother and not the father, and living with the father and not with the mother, conditional on both parents being alive.

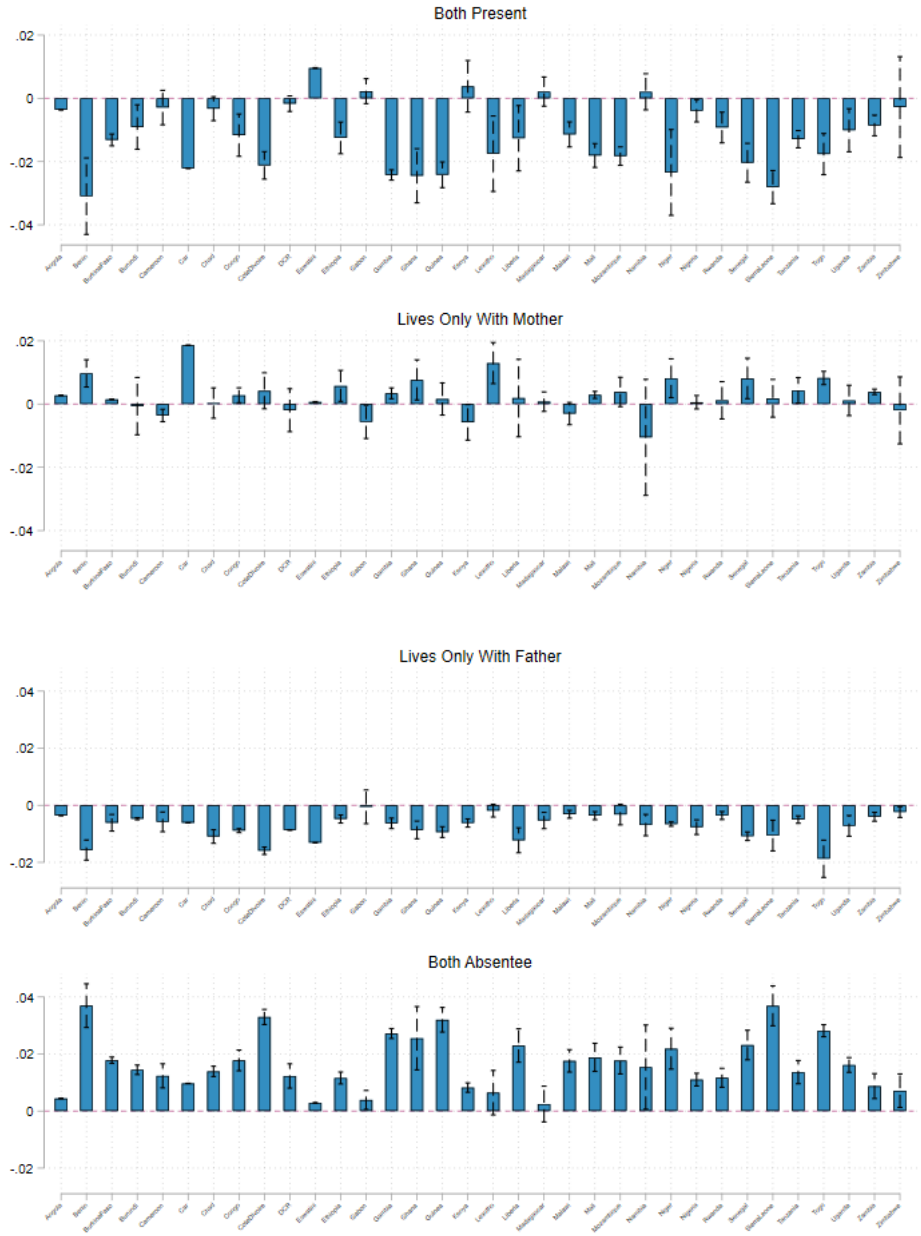
$$\mathrm{Y}_{is} = \alpha + \beta_c Girl_{is} + \gamma X_a + \delta_{cs} + \epsilon_{is} \tag{1}$$

where G_{ics} is equal to 1 if child i in country-survey s is a girl; X_a are child's age fixed effects; and δ_s are country-survey fixed effects. $\mathrm{Y}_{ics} = 1$ if the child lives with particular parental configuration considered. The coefficients of interest are the β_c.

Figure 2 shows the results. Across the board, girls are more likely to live with neither her parents. They are also less likely to live only with their father, i.e. having an absentee mother. But there are differences when it comes the probability of living with the mother only. The majority have either a positive probability or no statistical difference. But, in a few countries girls are actually less likely than boys to have their mother present without their father: Cameroon, Eswatini, Gabon, Malawi. These countries have in common the presence of matrilineal groups.

To be sure, these numbers reflect a large number of patterns including potential fertility responses to the gender of one's child. In what follows, we therefore focus

Figure 2: Gender Gap on the Probability of Living with Parents



on the first born children and ask whether boys and girls are as likely as each other to live with their mother and with their father.

3.2 Living with the mother

The DHS women questionnaires have information on all births and each child's current residence. We can use this information to look at the overall probability that a child has of living with her mother. We limit to women age max 35 (to avoid selective mortality), and whose oldest children is 12 (due to presence of patrilocality norms and child marriage).

Let Pr(LM|i) be the probability for of living with the mother for a child i=girl, boy. We estimate Pr(LM|girl)-Pr(LM|boy) with the following regression specification:

$$\text{LM}_{ics} = \alpha + \beta Girl_{ics} + \gamma X_{ics} + \delta_{cs} + \epsilon_{ics} \tag{2}$$

where LM $_{ics}$ is equal to 1 if child i in country c and survey s lives his mother. The coefficient of interest is β. We also add controls for child and mother's age and age squared, as well as year of birth and survey fixed effect.

Looking only at first born children, Table 2 shows that the overall probability of living with their mother is not different for firstborn boys than girls.

Table 2: Probability Firstborn Child Lives with Mother

	(1)	(2)	(3)
Firstborn girl	0.0004	0.0004	0.0005
	(0.0017)	(0.0017)	(0.0017)
Mother's age	-0.0079***	-0.0065*	-0.0053
	(0.0022)	(0.0034)	(0.0035)
Mother's age squared	0.0003***	0.0003***	0.0003***
	(0.0000)	(0.0001)	(0.0001)
Firstborn's age	-0.0491***	-0.0491***	-0.0333***
	(0.0021)	(0.0021)	(0.0026)
Firstborn's age squared	0.0018***	0.0018***	0.0019***
	(0.0001)	(0.0001)	(0.0002)
_cons	1.0270***	0.9754***	0.9016***
	(0.0269)	(0.0616)	(0.0638)
Country-Survey FE	✓	✓	✓
Mother's year of birth FE		✓	✓
Firstborn's year of birth FE			✓
N	425,683	425,683	425,683
adj. R^2	0.08	0.08	0.08

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey-year level.

3.3 Absentee Dad

Next, we analyze the differential probabilities of having an absentee father by child's gender. For children living with their mother, we run specification similar to (2) to see if the gender of the first born affects the likelihood that the father is living with them. Note that we unfortunately do not have information regarding the children that are not living with their mother.

Table 3: Effect of first born girl on probability of absentee father

	All				Birth before marriage			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.007***	0.007**	0.005*	0.005*	0.006	0.007	-0.001	-0.001
	(0.002)	(0.003)	(0.003)	(0.003)	(0.005)	(0.007)	(0.011)	(0.011)
Age at first birth	0.008***	0.008***	0.010***	0.010***	0.040***	0.041***	0.043***	0.043***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Mother's age	-0.054***	-0.049***	-0.058***	-0.058***	-0.063***	-0.067***	-0.074***	-0.074***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.008)	(0.010)	(0.012)	(0.012)
Mother's age squared	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.000				0.000
				(.)				(.)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓	✓			✓	✓
Area 1 time trend			✓	✓			✓	✓
Ethnic group FE		✓	✓	✓		✓	✓	✓
Religion FE		✓	✓	✓		✓	✓	✓
Cluster controls			✓	✓			✓	✓
Baseline	0.30	0.29	0.27	0.27	0.68	0.65	0.65	0.65
Percent Effect	2.30	2.53	1.81	1.81	0.83	1.12	-0.16	-0.16
N	289,931	211,166	152,801	152,801	50,263	32,181	22,660	22,660
adj. R^2	0.10	0.12	0.15	0.15	0.18	0.22	0.25	0.25

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. The outcome variable is an indicator variable equal to 1 if the father of the first born child does not live in the same household.

For children living with their mother, Table 3 reveals a higher likelihood of an absentee father. The right panel of Table 3 reveals that the effect is coming purely from couples who were married prior to the conception. Decomposing further by the age of the first born further reveals that all the effect is coming from the subsample of kids that are older than five (Tables 4 and 5). Among the latter, fathers are 1 percentage point more likely to be absent if the first born is a girl (a 4% increase).

The overall likelihood of living with either parents could reflect different probabilities of marriage, divorce, as well as different custody arrangements for boys compared to girls. This is what we will explore next.

Table 4: Effect of first born girl on probability of absentee father. First Born < 5

	All				Birth before marriage			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.005*	0.003	0.001	0.001	0.002	-0.002	-0.003	-0.003
	(0.003)	(0.004)	(0.003)	(0.003)	(0.005)	(0.007)	(0.010)	(0.010)
Age at first birth	0.019***	0.018***	0.019***	0.019***	0.058***	0.059***	0.060***	0.060***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.004)	(0.005)	(0.005)
Mother's age	-0.071***	-0.064***	-0.078***	-0.078***	-0.067***	-0.068***	-0.073***	-0.073***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.009)	(0.011)	(0.014)	(0.014)
Mother's age squared	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.000				0.000
				(.)				(.)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓	✓			✓	✓
Area 1 time trend			✓	✓			✓	✓
Ethnic group FE		✓	✓	✓		✓	✓	✓
Religion FE		✓	✓	✓		✓	✓	✓
Cluster controls			✓	✓			✓	✓
Baseline	0.36	0.35	0.33	0.33	0.81	0.79	0.80	0.80
Percent Effect	1.42	0.90	0.41	0.41	0.20	-0.24	-0.32	-0.32
N	144,678	104,422	75,116	75,116	28,513	17,756	12,583	12,583
adj. R^2	0.10	0.13	0.15	0.15	0.11	0.14	0.17	0.17

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. The outcome variable is an indicator variable equal to 1 if the father of the first born child does not live in the same household.

4 Family structure

Consider a particular marital status M. Let Pr(M|i) be the probability of marital status M for the mother of a child i=girl, boy. Throughout the section, we will estimate Pr(M|girl)-Pr(M|boy) with the following regression specification:

$$\mathrm{M}_{ics} = \alpha + \beta Girl_{ics} + \gamma X_{ics} + \delta_{cs} + \epsilon_{ics} \tag{3}$$

where M_{ics} is equal to 1 if the mother of i in country c and survey s had marital status M, and $Girl_{ics} = 1$ if her first born is a girl. X_{ics} controls for mother's age and age squared, her age at first birth, her education, admin area 1 FE, area 1 time trend, ethnic FE, religion FE, and household cluster controls. Standard errors are

Table 5: Effect of first born girl on probability of absentee father. First Born 5-11

	All				Birth before marriage			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.009***	0.011***	0.008*	0.008*	0.010	0.018	-0.000	-0.000
	(0.003)	(0.004)	(0.004)	(0.004)	(0.009)	(0.012)	(0.017)	(0.017)
Age at first birth	0.002**	0.003**	0.003***	0.003***	0.024***	0.025***	0.025***	0.025***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)	(0.003)	(0.003)
Mother's age	-0.027***	-0.025***	-0.026***	-0.026***	-0.027**	-0.029**	-0.023	-0.023
	(0.005)	(0.005)	(0.006)	(0.006)	(0.012)	(0.013)	(0.017)	(0.017)
Mother's age squared	0.000***	0.000***	0.000***	0.000***	0.000***	0.000**	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.000				0.000
				(.)				(.)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓	✓			✓	✓
Area 1 time trend			✓	✓			✓	✓
Ethnic group FE		✓	✓	✓		✓	✓	✓
Religion FE		✓	✓	✓		✓	✓	✓
Cluster controls			✓	✓			✓	✓
Baseline	0.24	0.23	0.22	0.22	0.52	0.48	0.47	0.47
Percent Effect	3.63	4.82	3.83	3.83	1.82	3.70	-0.00	-0.00
N	145,252	106,592	77,557	77,557	21,749	14,234	9,908	9,908
adj. R^2	0.07	0.10	0.12	0.12	0.12	0.15	0.17	0.17

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. The outcome variable is an indicator variable equal to 1 if the father of the first born child does not live in the same household.

clustered at the survey-year level.

4.1 The effect on first marriage

To see if the gender of the first kid affects the decision to get married, we estimate (3) for M being "ever married" among women who had a kid before ever been married. This is because the sex of the first born can only affect the probability a woman ever been married if her first pregnancy occurred when she was single.

Table A3 shows that 17% of women of the sample had a kid before getting married (or have never married). But there is substantial heterogeneity across the countries in the sample. For example, 52% of the women in Gabon versus only 3% in

Niger. Among women who had a kid before getting married, the majority of them eventually entered a union or a marriage after (67%). Note that there is a negative cross-country relationship between the two statistics. Where kids out of wedlock are more common, the likelihood of a subsequent marriage is lower.

Table 6 presents the results for the probability of been ever married for women whose first birth happened out of wedlock. All the regressions are weighted and they control for mother and location characteristics. The results indicate that women with a first born girl are about 0.7 percentage points more likely to have ever been married. This correspond to a 1% increase in probability of ever being married for a mother with a first born girl as compared to a first born boy.

Table 6: Effect of FFB on probability of subsequent marriage

	Married after birth			
	(1)	(2)	(3)	(4)
First born girl	0.006***	0.006***	0.007**	0.008**
	(0.002)	(0.002)	(0.003)	(0.003)
Age at first birth	-0.032***	-0.029***	-0.027***	-0.027***
	(0.001)	(0.001)	(0.001)	(0.001)
Mother's age	0.101***	0.102***	0.094***	0.093***
	(0.004)	(0.004)	(0.004)	(0.004)
Mother's age squared	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.032***
				(0.004)
Mother's year of birth FE	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓
Admin. area 1 FE			✓	✓
Area 1 time trend			✓	✓
Ethnic group FE		✓	✓	✓
Religion FE		✓	✓	✓
Cluster controls			✓	✓
Baseline	0.69	0.73	0.74	0.74
Percent Effect	0.82	0.87	0.96	1.06
N	170,587	116,790	75,999	75,999
adj. R^2	0.32	0.33	0.37	0.37

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. The outcome variable is an indicator variable equal to 1 if the woman was ever married for women whose first child was born before marriage. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

These results however mix the probability of what is often called a "shotgun marriage", defined as marrying the father of the child shortly after the birth, and future marital decisions of the mother (e.g. join a polygamous marriage, marry once the kid becomes old, etc.). To try to distinguish "shotgun" from subsequent marriages

marriages, the left panel of Table 7 shows the effect on shotgun marriage by restricting the sample to women whose first born was born no more than 5 years ago. The right panel shows the effect of a FFB on the likelihood of becoming ever married among women whose first born was born between 6 and 12 years ago. Note that 50% of the women who marry after the birth do so within 30 months since the birth of the first born child, and 75% do so within 5 years. Table 7 reveals very distinct patterns. Having a daughter, if anything, decreases the probability of shotgun marriages, but it increases the probability of subsequent marriage more than five years after the birth by 1-2 percentage points (about 2.5%).

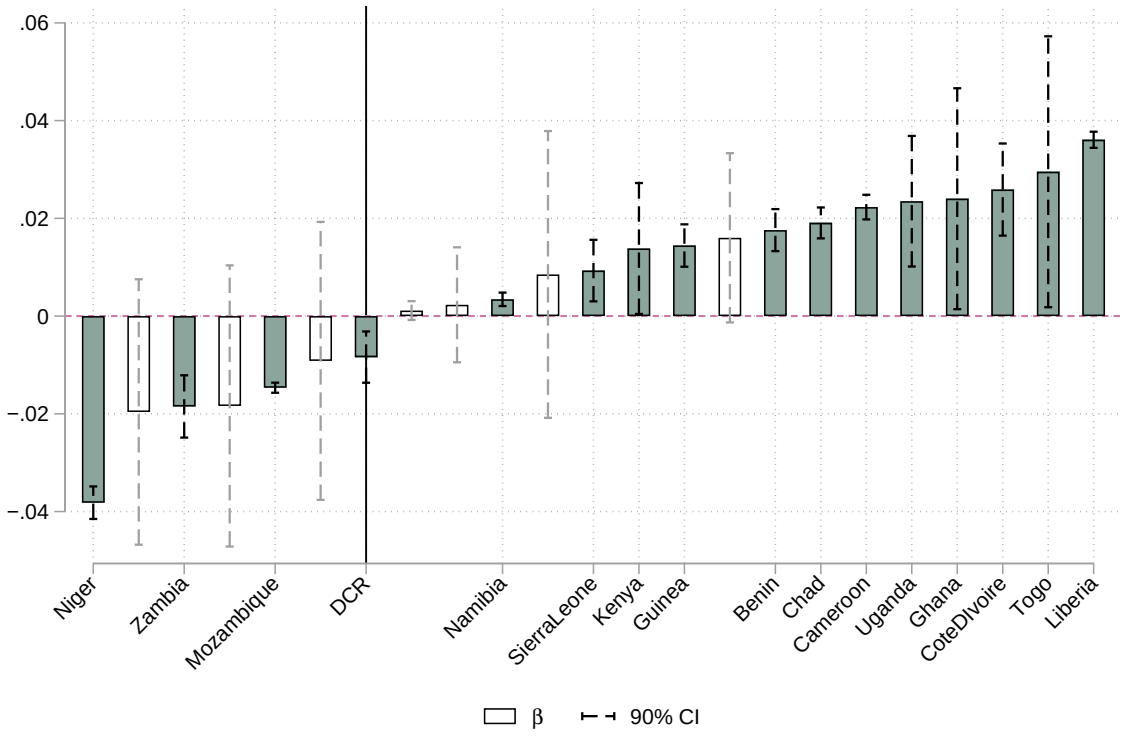
Table 7: Effect of first born girl on shotgun marriage by years since first born's birth

	First born < 5				First born $5 - 11$			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.003	0.002	-0.004	-0.004	0.011**	0.010	0.019*	0.019*
	(0.005)	(0.006)	(0.008)	(0.008)	(0.005)	(0.006)	(0.009)	(0.009)
Age at first birth	-0.100***	-0.103***	-0.109***	-0.109***	-0.037***	-0.033***	-0.029***	-0.029***
	(0.004)	(0.004)	(0.006)	(0.006)	(0.002)	(0.002)	(0.002)	(0.002)
Mother's age	0.109***	0.113***	0.109***	0.109***	0.053***	0.055***	0.070***	0.070***
	(0.009)	(0.012)	(0.012)	(0.012)	(0.009)	(0.011)	(0.014)	(0.014)
Mother's age squared	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.000				0.000
				(.)				(.)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓	✓			✓	✓
Area 1 time trend			✓	✓			✓	✓
Ethnic group FE		✓	✓	✓		✓	✓	✓
Religion FE		✓	✓	✓		✓	✓	✓
Cluster controls			✓	✓			✓	✓
Baseline	0.30	0.33	0.33	0.33	0.71	0.75	0.77	0.77
Percent Effect	0.99	0.48	-1.24	-1.24	1.55	1.32	2.46	2.46
N	41,038	26,503	16,939	16,939	43,287	29,018	18,409	18,409
adj. R^2	0.18	0.21	0.26	0.26	0.14	0.15	0.20	0.20

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. The outcome variable is an indicator variable equal to 1 if the woman was ever married for women whose first child was born before marriage. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

By country The cross-country results presented above assume a constant-effects model. We analyze heterogeneity at the country level. Specifically, we estimate equation 2 allowing for country-specific coefficients β_c. Figure 3 presents the results equivalent to Table 6 column (4).

Figure 3: Effect of first born girl of subsequent marriage



Figures 4 and 5 limit by years since birth of the first born child (less than 5 and between 6 and 12). These figures show that the average effects hide a lot of heterogeneity across countries.

Figure 4: Effect of first born girl of subsequent marriage. First born ≤ 5

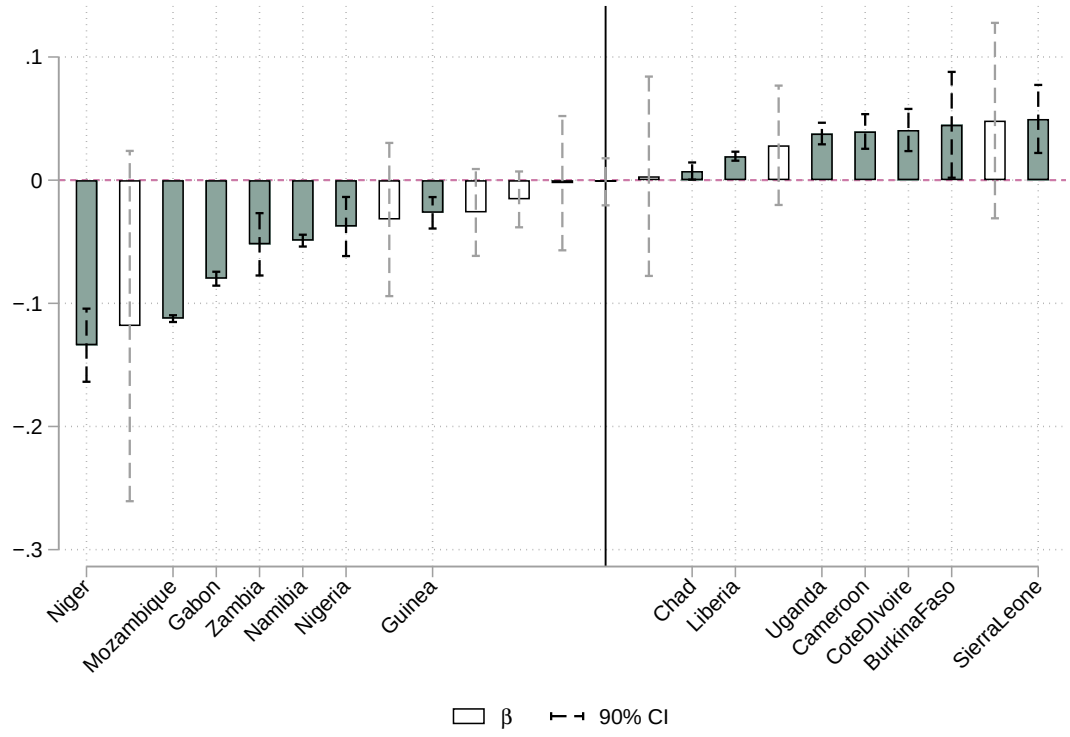
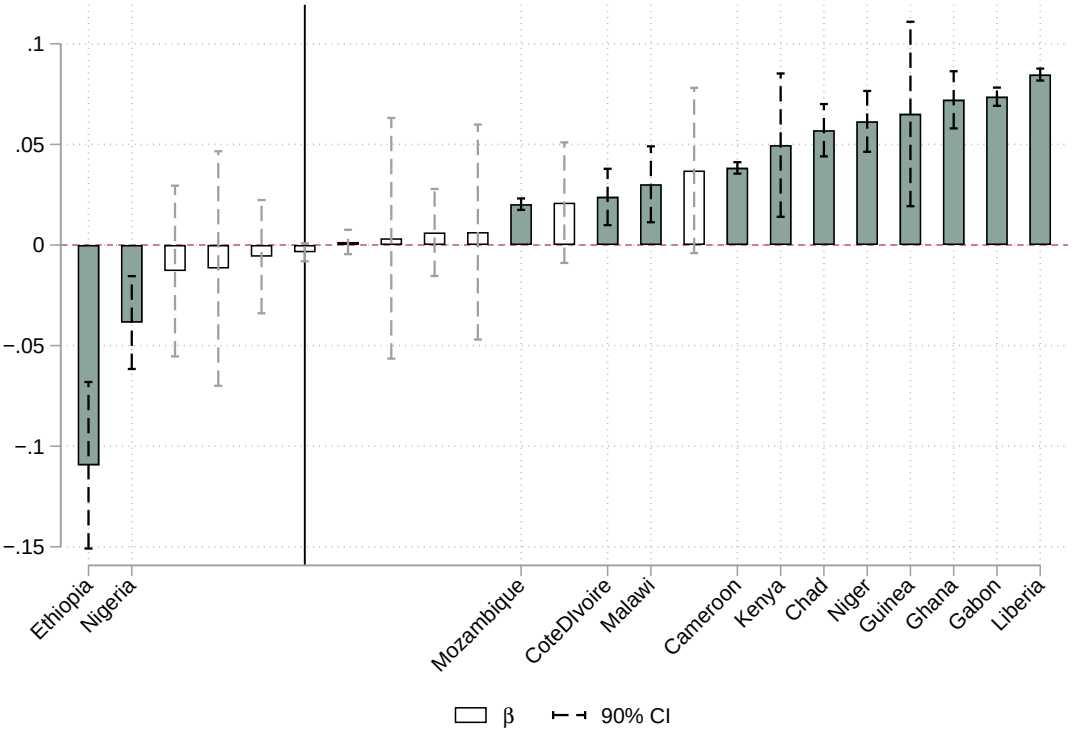


Figure 5: Effect of first born girl of subsequent marriage. First born 6-12



Robustness checks Appendix A.3 shows that the results are similar when limiting the sample to women before 35 (Tables A4 and A5). The results are also robust to dropping women whose first born child was dead at the time of the survey (Tables A6 and A7). To check that no one country drives the results, we checked that the effects are virtually unchanged when dropping one country at the time.

4.1.1 Who do the mothers marry?

We saw that women with a female first born seem a bit less likely to get married in the short run, but are ultimately more likely to get married. It seems unlikely that this pattern reflects a similar likelihood of ultimately marrying the father of the first born, just delayed. To check this, we merge the women sample with the men sample.

In order to isolate the effect of future divorce and remarriage decisions, we limit the sample to women who have only been in one union, are currently married or living together, and whose first born child was born before their first union (a sample size of 19,571). We find evidence that when the first born is a girl, the mother is less likely to ultimately marry the father of the first born child, see Table 8. In Table 9, we show the effects are not driven by a potential lack of randomness of the first-born's death given its gender.

Table 8: Effect of first born girl born on marrying kid's father

	0-12			0-5			6-12		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
First born girl	-0.008	-0.008	-0.035**	0.007	0.000	-0.013	-0.016	-0.026	-0.051**
	(0.016)	(0.018)	(0.016)	(0.027)	(0.034)	(0.029)	(0.019)	(0.025)	(0.022)
Age at first birth	0.032***	0.029***	0.023***	0.055***	0.036**	0.035**	0.023***	0.017***	0.012**
	(0.003)	(0.004)	(0.003)	(0.011)	(0.017)	(0.014)	(0.005)	(0.006)	(0.005)
Mother's age	-0.041*	-0.038	-0.051*	-0.119**	-0.181*	-0.129	-0.009	-0.004	-0.052
	(0.022)	(0.028)	(0.026)	(0.055)	(0.104)	(0.088)	(0.032)	(0.038)	(0.041)
Mother's age squared	-0.000	-0.000	0.000	0.000	0.002	0.001	-0.000	-0.000	0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)	(0.002)	(0.000)	(0.001)	(0.001)
First born dead			-0.581***			-0.634***			-0.555***
			(0.020)			(0.044)			(0.025)
Mother's Year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mother's Education level FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE		✓	✓		✓	✓		✓	✓
Area 1 time trend		✓	✓		✓	✓		✓	✓
Ethnic FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Religion FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cluster controls		✓	✓		✓	✓		✓	✓
Baseline	0.51	0.50	0.50	0.59	0.57	0.57	0.49	0.49	0.49
Percent Effect	-1.56	-1.62	-6.98	1.15	0.03	-2.22	-3.27	-5.29	-10.37
N	6,547	5,472	5,472	1,801	1,415	1,415	4,568	3,790	3,790
adj. R^2	0.13	0.15	0.31	0.19	0.16	0.34	0.12	0.13	0.28

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at administrative area level.

Table 9: Effect of first born girl born on marrying kid's father if first born alive

	0-12		0-5		6-12	
	(1)	(2)	(3)	(4)	(5)	(6)
First born girl	-0.035**	-0.041**	-0.008	-0.005	-0.036*	-0.055**
	(0.016)	(0.019)	(0.029)	(0.033)	(0.019)	(0.027)
Age at first birth	0.031***	0.028***	0.054***	0.035**	0.021***	0.016**
	(0.003)	(0.004)	(0.011)	(0.015)	(0.006)	(0.007)
Mother's age	-0.047*	-0.035	-0.138***	-0.108	-0.020	-0.024
	(0.025)	(0.031)	(0.052)	(0.109)	(0.036)	(0.047)
Mother's age squared	0.000	-0.000	0.001	0.001	0.000	0.000
	(0.000)	(0.000)	(0.001)	(0.002)	(0.000)	(0.001)
Mother's Year of birth FE	✓	✓	✓	✓	✓	✓
Mother's Education level FE	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓
Admin. area 1 FE		✓		✓		✓
Area 1 time trend		✓		✓		✓
Ethnic FE	✓	✓	✓	✓	✓	✓
Religion FE	✓	✓	✓	✓	✓	✓
Cluster controls		✓		✓		✓
Baseline	0.61	0.61	0.69	0.66	0.58	0.59
Percent Effect	-5.63	-6.67	-1.17	-0.78	-6.24	-9.21
N	5,520	4,582	1,532	1,175	3,801	3,119
adj. R^2	0.16	0.18	0.22	0.21	0.14	0.14

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at administrative area level.

4.2 Effect on post-marriage polygamy

Polygamy is widespread in sub-Saharan Africa (Fenske 2015). When a men takes on additional wives, he spreads or distributes his time and limited resources among more women and children while alive and upon his death. As a result it is unlikely to be desirable from the point of view of an existing wife. This section studies the effect of the gender of the first child on the probability of being in a polygamous marriage. Tables 10 presents the results. We see overall a 1.5% increase in the probability of being in a polygamous marriage, all coming from women whose first child was born after marriage. Since polygamy rates are twice as high among muslim than christian women (40% as opposed to 20%), we explore religion heterogeneity and interact the

female first born coefficient with religion in Table 11. Unsurprisingly the effect is strongest among muslim women.

Table 10: Effect of first born girl on being in a polygamous marriage.

	All				First born born before marriage			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.003**	0.004***	0.004**	0.005***	-0.005	-0.002	-0.002	-0.001
	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.004)	(0.005)	(0.005)
Age at first birth	-0.005***	-0.005***	-0.003***	-0.003***	-0.006***	-0.005***	-0.004***	-0.003***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Mother's age	0.028***	0.025***	0.026***	0.026***	0.024***	0.023***	0.021***	0.021***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.006)	(0.006)	(0.008)	(0.008)
Mother's age squared	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000**	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.024***				0.028***
				(0.003)				(0.006)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓	✓			✓	✓
Area 1 time trend			✓	✓			✓	✓
Ethnic group FE		✓	✓	✓		✓	✓	✓
Religion FE		✓	✓	✓		✓	✓	✓
folder	✓	✓	✓	✓	✓	✓	✓	✓
Cluster controls			✓	✓			✓	✓
Baseline	0.27	0.30	0.31	0.31	0.24	0.26	0.28	0.28
Percent Effect	1.03	1.35	1.39	1.59	-1.95	-0.69	-0.80	-0.52
N	698,842	543,007	374,884	374,884	94,098	69,636	45,861	45,861
adj. R^2	0.13	0.15	0.18	0.18	0.11	0.13	0.16	0.16

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

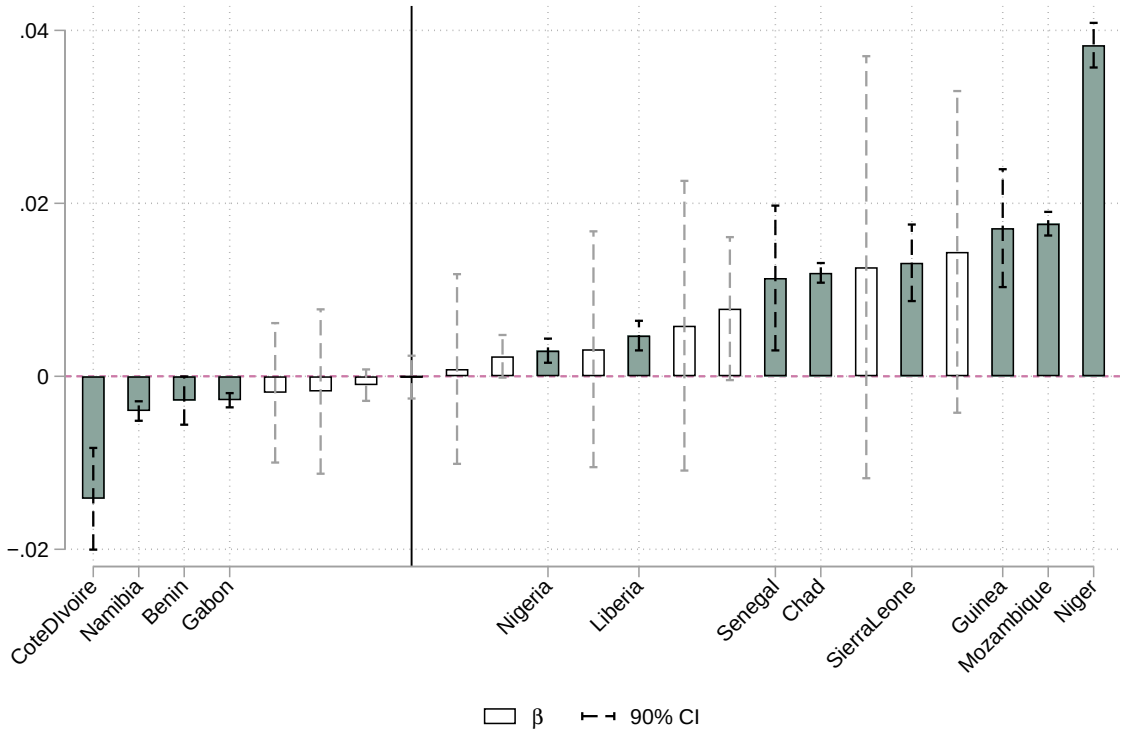
Table 11: Effect of first born girl on being in a polygamous marriage by religion

	All				First born born before marriage			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl × Christian	0.001	0.001	0.002	0.004*	-0.009**	-0.006	-0.008	-0.012**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.004)	(0.005)	(0.005)	(0.005)
First born girl × Muslim	0.007***	0.007***	0.007**	0.009***	0.008	0.008	0.009	0.003
	(0.002)	(0.002)	(0.003)	(0.003)	(0.007)	(0.007)	(0.007)	(0.008)
First born girl × Other relig	-0.000	0.000	0.001	0.003	-0.006	-0.006	-0.008	-0.014
	(0.004)	(0.004)	(0.005)	(0.005)	(0.009)	(0.012)	(0.018)	(0.019)
Age at first birth	-0.005***	-0.005***	-0.003***	-0.003***	-0.006***	-0.005***	-0.004***	-0.003***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Mother's age	0.025***	0.025***	0.026***	0.026***	0.020***	0.023***	0.021***	0.021***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.006)	(0.006)	(0.008)	(0.008)
Mother's age squared	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000**	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.026***				0.016*
				(0.003)				(0.008)
First born girl × Fb dead				-0.005				0.027**
				(0.004)				(0.011)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓	✓			✓	✓
Area 1 time trend			✓	✓			✓	✓
Ethnic group FE		✓	✓	✓		✓	✓	✓
Religion FE		✓	✓	✓		✓	✓	✓
Cluster controls			✓	✓			✓	✓
fb[christian]=fb[muslim] p-value	0.02	0.02	0.13	0.11	0.04	0.09	0.03	0.05
fb[christian]=fb[other] p-value	0.75	0.73	0.82	0.88	0.81	1.00	0.97	0.91
N	655,324	543,007	374,884	374,884	89,318	69,636	45,861	45,861
adj. R^2	0.14	0.15	0.18	0.18	0.12	0.13	0.16	0.16

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

Robustness checks: Tables A8 limit to women currently on their first union. Table A9 in Appendix A.4 show very similar results when limiting the sample to women before 35. Table A10 limits to women whose first born child was alive at the time of the interview.

Figure 6: Effect of first born girl on probability of polygamy



4.3 Effect on divorce

Table 12 shows the effect of having a female first born on the likelihood of being a divorcee for all women and for women 30 years old or above. For the women who had a child before marriage, Section 4.1 showed different probability of marriage depending on the gender of the child. This suggests differences in the type of marriages formed after the birth of a boy and girl that could be correlated with the probability of divorce. We therefore restrict the sample to women whose first child was born after marriage. The results show that women whose first born was a girl are 8% more likely to be currently divorced (0.2 p.p.).

One concern with looking at women currently divorced is that it missed women who did divorce but are currently remarried. Our findings might indicate that women with a first born daughter are more likely to divorce, or that they are less likely

to remarry once divorced, or both. For 17 of the surveys,[3] we have information on women's previous marital status and can assign an "ever divorced" status even to women who remarried after. FollowingMilazzo (2014), we define "ever divorced" as either: currently divorced or women whose previous marriage ended in divorce or separation. Table 12 shows that the results are stronger, specially for women 30 years old or above: 8% (1.4p.p.).

[3]Benin 2006, Congo 2005, DCR 2007, Eswatini 2006, Gabon 2012, Lesotho 2009, Malawi 2010, Mali 2006, Namibia 2006, Niger 2006, Nigeria 2008-2013, Sierra Leone 2008, Uganda 2006, Zambia 2007-2013, Zimbabwe 2005.

Table 12: Effect of first born girl on probability of divorce

	All women				Women age ≥ 30			
	Currently divorced		Ever divorced		Currently divorced		Ever divorced	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.001**	0.002***	0.005**	0.007*	0.001	0.002	0.008**	0.013**
	(0.001)	(0.001)	(0.002)	(0.003)	(0.001)	(0.001)	(0.003)	(0.005)
Age at first birth	-0.000	0.000	-0.005***	-0.002*	0.000	0.000**	-0.004***	-0.001
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)
Mother's age	-0.001	-0.001	0.012	0.013**	-0.001	-0.002	-0.006	-0.014
	(0.001)	(0.001)	(0.008)	(0.004)	(0.001)	(0.002)	(0.008)	(0.008)
Mother's age squared	0.000	0.000	-0.000***	-0.000***	0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
First born dead		0.004**		0.034***		0.003**		0.038***
		(0.002)		(0.007)		(0.002)		(0.008)
c.fb_dead#c.fb_dau		-0.002		-0.001		-0.001		-0.003
		(0.001)		(0.008)		(0.002)		(0.010)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE		✓		✓		✓		✓
Area 1 time trend		✓		✓		✓		✓
Ethnic group FE		✓		✓		✓		✓
Religion FE		✓		✓		✓		✓
Cluster controls		✓		✓		✓		✓
Baseline	0.03	0.03	0.15	0.15	0.03	0.03	0.17	0.17
Percent Effect	3.76	7.96	3.35	4.47	2.34	5.18	4.38	7.64
N	708,337	375,823	129,866	78,155	405,253	211,869	73,747	43,779
adj. R^2	0.02	0.03	0.04	0.06	0.02	0.04	0.04	0.06

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. Columns (1)-(2) and (5)-(6): the outcome variable is an indicator variable equal to 1 if the woman is currently divorced. Columns (3)-(4) and (7)-(8): the outcome variable is an indicator variable equal to 1 if the woman who is currrently divorced or has ever been divorced or separated. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

By country Looking at country-specific coefficients, we see that the effect of a girl on divorce is positive for most countries but that there is a subset of countries for which the effect is null or even negative (Figures 7 and 8).

Figure 7: Effect of first born girl on probability of being currently divorced

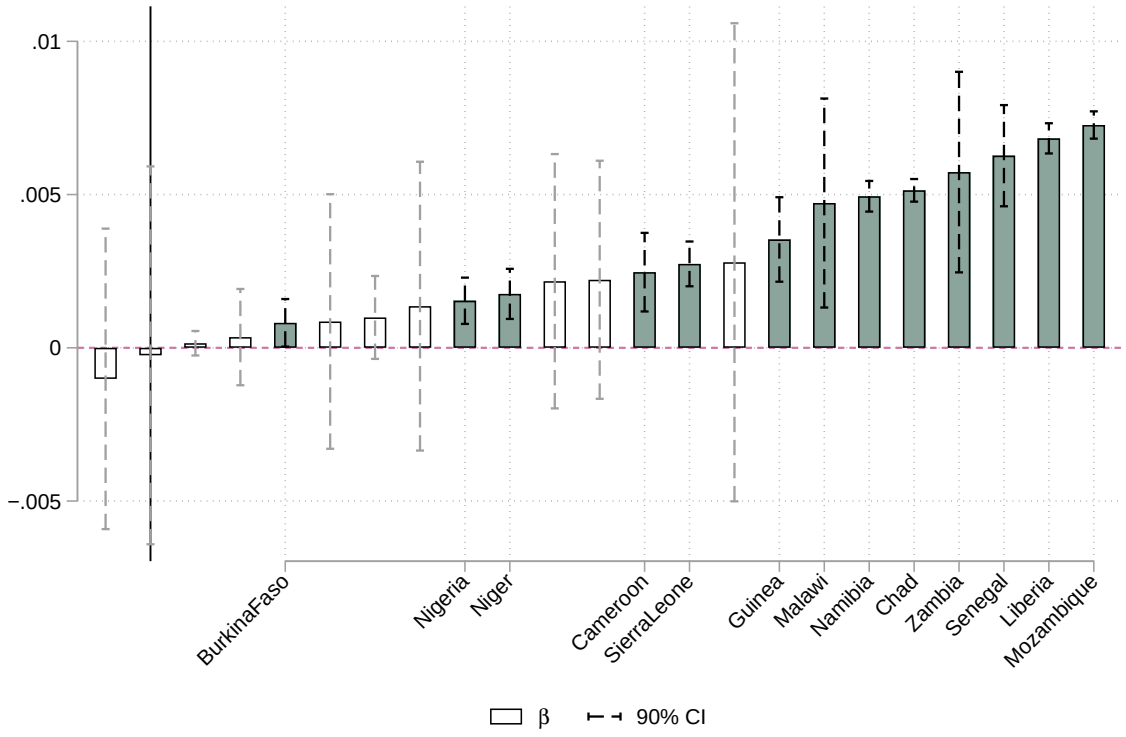
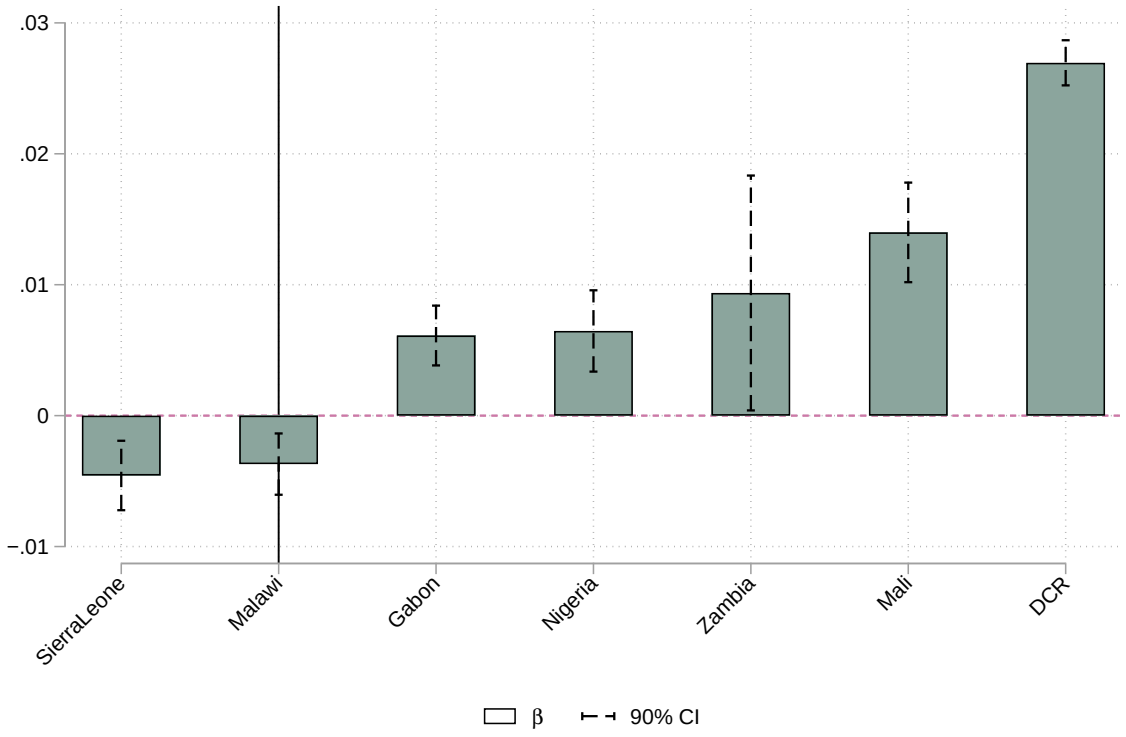


Figure 8: Effect of first born girl on probability of ever been divorced



Robustness checks: Appendix A.5 show very similar results when limiting the sample to women before 35 (Tables A11 and A12). Table A13 limits to women whose first born child was alive at the time of the interview.

5 Heterogeneity Analysis

In this section we combine these data with information on ancestral an- thropological and cultural practices of the ethnic group to which the woman belongs. This allow us to relate the effect of the gender of the first child to traditional practices. [Work in Progress]

6 Conclusion

This paper studies the effect of the sex of the first child family structure in sub-Saharan Africa using DHS data.

We find that having a first born girl increases the likelihood of having an absentee father bur raises the probability of ever been married. It increases the likelihood of being in a polygamous relationship and decreases the likelihood of remaining married in sub-Saharan Africa.

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Appendix

A.1 Samples

Table A1: List of used DHS Surveys

		Share of non-missing observations			
Country	DHS Years	Ethnicity	Ethnic Customs	Religion	Area
Angola	2015, 2016	N/A	N/A	100.00	100.00
Benin	1996, 2001, 2006, 2011, 2012, 2017, 2018	96.19	96.11	99.90	69.52
Burkina Faso	1998, 1999, 2003, 2010	95.18	95.18	99.84	96.88
Burundi	2010, 2011, 2016, 2017	N/A	N/A	99.39	99.74
Cameroon	1998, 2004, 2011	96.82	93.00	99.79	82.57
Central African Republic	1994, 1995	97.99	97.99	100.00	100.00
Chad	1996, 1997, 2004, 2014, 2015	94.16	80.13	99.56	57.35
Congo	2005, 2011, 2012	91.20	80.00	99.91	N/A
Cote d'Ivoire	1994, 1998, 1999, 2011, 2012	78.29	47.10	97.09	98.23
DR Congo	2007, 2013, 2014	99.31	99.31	99.79	93.72
Eswatini	2006, 2007	N/A	N/A	99.94	97.22
Ethiopia	2000, 2005, 2011, 2016	99.55	90.57	99.98	97.56
Gabon	2000, 2001, 2012	79.76	79.75	99.83	58.20
Gambia	2013	92.24	92.24	99.84	N/A
Ghana	1998, 1999, 2003, 2008, 2014	93.48	92.87	98.29	98.29
Guinea	1999, 2005, 2012	98.40	98.40	99.83	97.88
Kenya	1998, 2003, 2008, 2009, 2014	97.37	97.37	99.87	84.99
Lesotho	2004, 2005, 2009, 2010, 2014	N/A	N/A	66.83	96.00
Liberia	2006, 2007, 2013	55.54	55.54	99.47	96.60
Madagascar	1997, 2003, 2004, 2008, 2009	N/A	N/A	98.57	74.38
Malawi	2000, 2004, 2005, 2010, 2015, 2016	94.05	96.00	99.97	98.82
Mali	1995, 1996, 2001, 2006, 2012, 2013	93.24	93.24	99.80	99.45
Mozambique	1997, 2003, 2004, 2011	62.74	58.03	93.93	39.12
Namibia	2000, 2006, 2007, 2013	26.34	26.34	99.76	98.50
Niger	1998, 2006, 2012	57.85	57.84	58.65	26.40
Nigeria	2003, 2008, 2013	78.36	68.68	99.53	99.31
Rwanda	2000, 2005, 2010, 2011, 2014, 2015	N/A	N/A	78.58	78.50
Senegal	1997, 2005, 2010, 2011, 2012, 2013, 2015, 2017	92.10	92.06	87.52	75.60
Sierra Leone	2008, 2013	92.03	91.99	99.73	99.63
Tanzania	1999, 2004, 2005, 2009, 2010, 2015, 2016	N/A	N/A	10.65	71.27
Togo	1998, 2013, 2014	91.93	88.09	99.94	99.65
Uganda	1995, 2000, 2001, 2006, 2011, 2016	64.87	63.42	99.97	81.35
Zambia	1996, 1997, 2001, 2002, 2007, 2013, 2014	97.92	97.32	99.76	59.92
Zimbabwe	1994, 1999, 2005, 2006, 2010, 2011, 2015	N/A	N/A	99.96	83.20

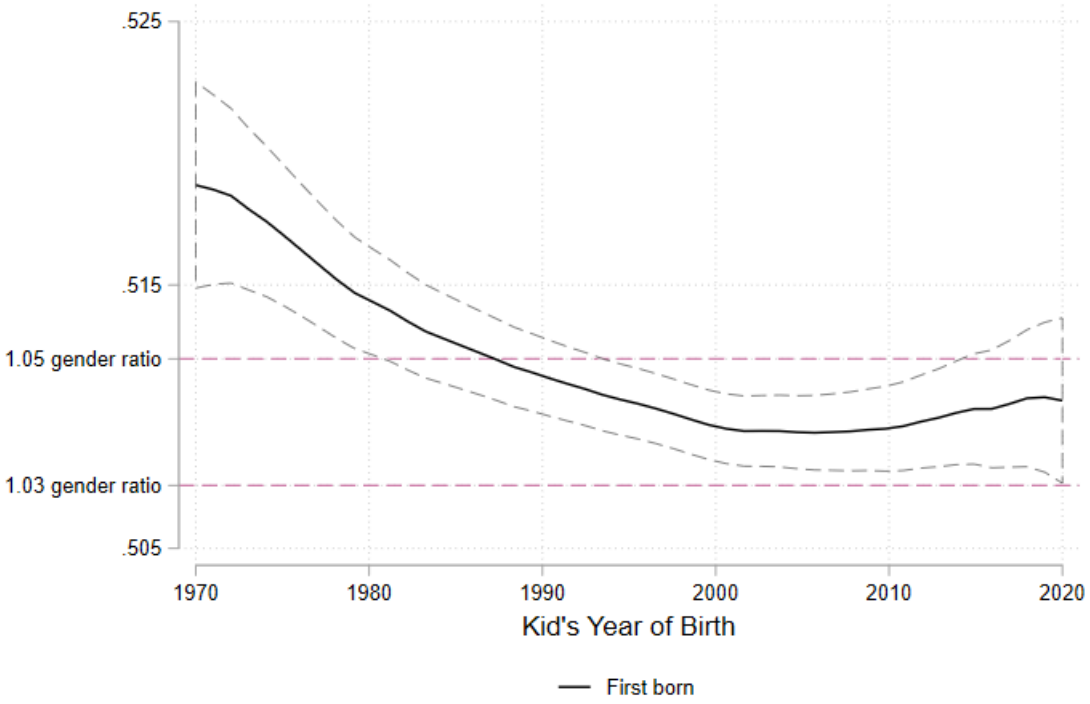
Table A2: Summary statistics of the women of the regression samples

	Mean	Std. Dev.	Obs.
Age	31.54	8.51	848,863
Age at first birth	19.07	3.75	848,863
Age at first marriage	17.93	4.11	799,927
Not educated	0.43	0.49	848,863
Primary	0.35	0.48	848,863
Secondary or higher	0.22	0.41	848,863
No. children	3.97	2.60	848,863
No. Born daughters	1.95	1.62	848,863
No. Born sons	2.02	1.66	848,863
First born girl	0.49	0.50	848,863
First born dead	0.16	0.37	848,749
Ever married	0.94	0.23	848,849
First Birth before marriage	0.19	0.39	848,863
Married	0.83	0.38	848,848
Polygamous	0.27	0.44	673,117
Divorced	0.03	0.17	799,950
Separated	0.05	0.22	799,950
Christian	0.60	0.49	769,765
Muslim	0.33	0.47	769,765
Matrilineal	0.19	0.39	533,934
Matrilocal	0.16	0.37	537,880

A.2 Sex ratios

Figure A1 plots the sex ratio of the first born child by the child's year of birth across countries and survey waves. We see that the sex ratio (male/female) has decreased over time also for the first born child but has stabilized around the natural ratio (103-105) since the 90s.

Figure A1: First Born Sex Ratio by Year of Birth



A.3 Kids out of Wedlock

Table A3: Children Before Marriage Summary Statistics

	All		**Uneducated**		**Educated**	
Country	Born before	Shotgun	Born before	Shotgun	Born before	Shotgun
Total	17.09	67.13	9.38	82.24	22.86	62.48
Angola	44.16	61.10	39.61	63.59	45.80	60.32
Benin	13.31	81.20	11.05	89.85	18.67	69.06
Burkina Faso	6.65	80.87	5.11	91.54	15.34	60.71
Burundi	8.39	54.84	5.93	68.25	11.01	47.18
Cameroon	23.21	70.63	6.83	88.17	29.41	69.09
Car	12.10	38.35	7.81	44.64	17.27	34.93
Chad	5.28	85.21	4.49	94.13	7.38	70.81
Congo	34.24	73.41	23.65	78.84	35.10	73.12
Cote D'Ivoire	33.04	65.20	25.28	71.19	46.06	59.67
DCR	14.53	65.25	11.45	83.41	15.32	61.78
Eswatini	69.45	53.14	57.41	70.14	70.82	51.57
Ethiopia	4.41	82.19	3.94	90.53	5.69	66.43
Gabon	52.59	66.25	23.32	70.06	54.43	66.14
Gambia	11.76	66.60	7.48	80.29	18.17	58.15
Ghana	17.24	67.86	12.28	85.37	19.42	62.98
Guinea	9.61	64.42	6.90	76.09	22.06	47.63
Kenya	28.47	69.56	12.37	82.61	30.43	68.92
Lesotho	19.72	47.26	16.31	77.08	19.79	46.78
Liberia	34.80	60.00	25.24	77.72	42.42	51.60
Madagascar	15.19	70.28	14.47	69.18	15.40	70.59
Malawi	12.26	78.92	9.37	93.56	13.04	76.09
Mali	9.90	80.91	8.17	87.45	18.61	66.49
Mozambique	18.56	75.08	13.86	86.77	21.97	69.74
Namibia	68.81	40.28	55.96	57.97	70.06	38.91
Niger	3.01	86.49	2.57	92.96	5.82	68.16
Nigeria	9.24	74.45	5.74	96.34	12.25	65.64
Rwanda	11.31	44.22	7.35	53.12	12.71	42.41
Senegal	10.52	69.78	7.46	83.25	16.71	57.57
Sierra Leone	23.54	62.44	17.25	82.54	38.01	41.45
Tanzania	20.49	71.07	12.94	79.52	22.76	69.62
Togo	14.52	75.32	10.54	85.38	18.22	69.90
Uganda	19.33	77.09	12.98	87.85	20.94	75.41
Zambia	22.87	66.63	13.16	75.15	24.25	65.99
Zimbabwe	16.31	73.62	13.12	90.90	16.51	72.76

Table A4: Effect of FFB on probability of subsequent marriage. Age ≤ 35.

	Married after birth			
	(1)	(2)	(3)	(4)
First born girl	0.004	0.005	0.009*	0.010*
	(0.003)	(0.004)	(0.005)	(0.005)
Age at first birth	-0.045***	-0.042***	-0.040***	-0.040***
	(0.001)	(0.002)	(0.002)	(0.002)
Mother's age	0.170***	0.173***	0.174***	0.173***
	(0.008)	(0.009)	(0.011)	(0.011)
Mother's age squared	-0.003***	-0.003***	-0.003***	-0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.041***
				(0.007)
Mother's year of birth FE	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓
Admin. area 1 FE			✓	✓
Area 1 time trend			✓	✓
Ethnic group FE		✓	✓	✓
Religion FE		✓	✓	✓
Cluster controls			✓	✓
Baseline	0.63	0.66	0.68	0.68
Percent Effect	0.69	0.78	1.29	1.42
N	115,413	74,588	48,450	48,442
adj. R^2	0.33	0.35	0.39	0.39

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. The outcome variable is an indicator variable equal to 1 if the woman was ever married for women whose first child was born before marriage. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

Table A5: Effect of first born girl on shotgun marriage by years since first born's birth. Age ≤ 35.

	First born ≤ 5				First born $6-12$			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.000	-0.002	-0.008	-0.007	0.009*	0.011*	0.021**	0.022**
	(0.005)	(0.006)	(0.009)	(0.009)	(0.005)	(0.006)	(0.009)	(0.009)
Age at first birth	-0.104***	-0.105***	-0.111***	-0.110***	-0.036***	-0.032***	-0.028***	-0.027***
	(0.004)	(0.005)	(0.007)	(0.007)	(0.001)	(0.002)	(0.002)	(0.002)
Mother's age	0.114***	0.121***	0.120***	0.119***	0.050***	0.062***	0.065***	0.065***
	(0.013)	(0.018)	(0.019)	(0.019)	(0.014)	(0.017)	(0.019)	(0.019)
Mother's age squared	-0.001***	-0.001***	-0.001***	-0.001***	-0.001**	-0.001**	-0.001**	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.092***				0.030***
				(0.018)				(0.010)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓	✓			✓	✓
Area 1 time trend			✓	✓			✓	✓
Ethnic group FE		✓	✓	✓		✓	✓	✓
Religion FE		✓	✓	✓		✓	✓	✓
Cluster controls			✓	✓			✓	✓
Baseline	0.32	0.35	0.36	0.36	0.74	0.77	0.80	0.80
Percent Effect	0.04	-0.55	-2.30	-1.99	1.20	1.36	2.64	2.71
N	42,269	26,180	16,760	16,756	45,208	29,101	18,795	18,792
adj. R^2	0.19	0.23	0.28	0.28	0.14	0.15	0.20	0.21

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. The outcome variable is an indicator variable equal to 1 if the woman was ever married for women whose first child was born before marriage. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

Table A6: Effect of FFB on probability of subsequent marriage if first born alive

	Married after birth		
	(1)	(2)	(3)
First born girl	0.007***	0.007**	0.011**
	(0.002)	(0.003)	(0.004)
Age at first birth	-0.034***	-0.032***	-0.030***
	(0.001)	(0.001)	(0.002)
Mother's age	0.103***	0.104***	0.100***
	(0.005)	(0.005)	(0.005)
Mother's age squared	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)
Mother's year of birth FE	✓	✓	✓
Mother's education level FE	✓	✓	✓
Country-Survey FE	✓	✓	✓
Admin. area 1 FE			✓
Area 1 time trend			✓
Ethnic group FE		✓	✓
Religion FE		✓	✓
Cluster controls			✓
Baseline	0.67	0.70	0.72
Percent Effect	1.04	1.03	1.48
N	136,354	86,951	56,301
adj. R^2	0.33	0.34	0.38

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. The outcome variable is an indicator variable equal to 1 if the woman was ever married for women whose first child was born before marriage. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

Table A7: Effect of first born girl on shotgun marriage by years since first born's birth if first born alive

	First born ≤ 5			First born $6-12$		
	(1)	(2)	(3)	(4)	(5)	(6)
First born girl	0.001	-0.001	-0.005	0.011**	0.012*	0.025***
	(0.005)	(0.006)	(0.009)	(0.005)	(0.006)	(0.009)
Age at first birth	-0.101***	-0.104***	-0.110***	-0.037***	-0.033***	-0.027***
	(0.004)	(0.005)	(0.007)	(0.001)	(0.002)	(0.002)
Mother's age	0.105***	0.108***	0.106***	0.047***	0.053***	0.072***
	(0.010)	(0.014)	(0.013)	(0.010)	(0.013)	(0.017)
Mother's age squared	-0.001***	-0.001***	-0.001***	-0.000***	-0.001**	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓			✓
Area 1 time trend			✓			✓
Ethnic group FE		✓	✓		✓	✓
Religion FE		✓	✓		✓	✓
Cluster controls			✓			✓
Baseline	0.31	0.33	0.35	0.72	0.75	0.77
Percent Effect	0.42	-0.33	-1.47	1.52	1.56	3.26
N	38,929	23,953	15,369	40,228	25,465	16,271
adj. R^2	0.19	0.22	0.27	0.14	0.15	0.21

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. The outcome variable is an indicator variable equal to 1 if the woman was ever married for women whose first child was born before marriage. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

A.4 Polygamy

Table A8: Effect of first born girl on being in a polygamous marriage. Women ever in one union.

	All				First born born before marriage			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.000	0.002	0.002	0.004*	-0.006*	-0.002	-0.005	-0.007
	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.004)	(0.005)	(0.005)
Age at first birth	-0.005***	-0.004***	-0.003***	-0.003***	-0.006***	-0.005***	-0.003**	-0.003**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Mother's age	0.026***	0.026***	0.023***	0.023***	0.022***	0.025***	0.017**	0.017**
	(0.004)	(0.004)	(0.003)	(0.003)	(0.007)	(0.007)	(0.008)	(0.008)
Mother's age squared	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.026***				0.016
				(0.004)				(0.009)
First born girl × Fb dead				-0.005				0.016
				(0.005)				(0.014)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓	✓			✓	✓
Area 1 time trend			✓	✓			✓	✓
Ethnic group FE		✓	✓	✓		✓	✓	✓
Religion FE		✓	✓	✓		✓	✓	✓
Cluster controls			✓	✓			✓	✓
Baseline	0.24	0.27	0.28	0.28	0.21	0.23	0.25	0.25
Percent Effect	0.15	0.66	0.84	1.36	-2.69	-0.86	-2.02	-2.97
N	546,710	396,797	281,585	281,535	70,984	49,171	32,496	32,494
adj. R^2	0.13	0.15	0.18	0.18	0.10	0.13	0.16	0.16

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

Table A9: Effect of first born girl on being in a polygamous marriage. Women below 35.

	All				First born born before marriage			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.002	0.004**	0.004*	0.004*	-0.001	0.002	-0.000	-0.006
	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)	(0.004)	(0.005)	(0.006)
Age at first birth	-0.008***	-0.007***	-0.005***	-0.005***	-0.008***	-0.007***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Mother's age	0.026***	0.025***	0.022***	0.021***	0.015*	0.017	0.007	0.007
	(0.004)	(0.005)	(0.004)	(0.004)	(0.008)	(0.010)	(0.013)	(0.013)
Mother's age squared	-0.000***	-0.000***	-0.000***	-0.000***	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
First born dead				0.022***				0.006
				(0.004)				(0.010)
First born girl × Fb dead				0.001				0.036*
				(0.005)				(0.018)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓	✓			✓	✓
Area 1 time trend			✓	✓			✓	✓
Ethnic group FE		✓	✓	✓		✓	✓	✓
Religion FE		✓	✓	✓		✓	✓	✓
Cluster controls			✓	✓			✓	✓
Baseline	0.23	0.26	0.27	0.27	0.21	0.22	0.24	0.24
Percent Effect	1.03	1.38	1.43	1.61	-0.35	0.97	-0.06	-2.65
N	458,201	332,595	234,965	234,913	58,926	40,998	27,178	27,176
adj. R^2	0.11	0.13	0.16	0.16	0.10	0.12	0.15	0.15

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

Table A10: Effect of first born girl on being in a polygamous marriage if first born alive

	All			First born born before marriage		
	(1)	(2)	(3)	(4)	(5)	(6)
First born girl	0.004***	0.005***	0.006***	-0.005	-0.001	-0.008
	(0.001)	(0.002)	(0.002)	(0.004)	(0.004)	(0.005)
Age at first birth	-0.005***	-0.004***	-0.003***	-0.006***	-0.005***	-0.003**
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Mother's age	0.029***	0.029***	0.025***	0.026***	0.029***	0.020**
	(0.004)	(0.004)	(0.003)	(0.007)	(0.007)	(0.009)
Mother's age squared	-0.000***	-0.000***	-0.000***	-0.000***	-0.000**	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓
Admin. area 1 FE			✓			✓
Area 1 time trend			✓			✓
Ethnic group FE		✓	✓		✓	✓
Religion FE		✓	✓		✓	✓
Cluster controls			✓			✓
Baseline	0.25	0.28	0.29	0.23	0.24	0.26
Percent Effect	1.55	1.96	1.95	-2.09	-0.39	-2.95
N	560,005	401,383	281,314	72,377	49,479	32,345
adj. R^2	0.13	0.15	0.17	0.10	0.13	0.16

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

A.5 Divorce

Table A11: Effect of first born girl on probability of divorce

	Women age 20-35				Women age 30-35			
	Currently divorced		Ever divorced		Currently divorced		Ever divorced	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.002***	0.003***	0.006**	0.008***	0.002**	0.002	0.014***	0.024**
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.003)	(0.008)
Age at first birth	-0.000	0.000	-0.008***	-0.004**	0.000*	0.001***	-0.006***	-0.001
	(0.000)	(0.000)	(0.001)	(0.002)	(0.000)	(0.000)	(0.001)	(0.001)
Mother's age	-0.001	0.001	0.026**	0.028*	0.002	0.007	0.118*	0.227
	(0.001)	(0.002)	(0.010)	(0.013)	(0.013)	(0.022)	(0.065)	(0.128)
Mother's age squared	0.000	-0.000	-0.001***	-0.001***	-0.000	-0.000	-0.002*	-0.004*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)
First born dead		0.005*		0.034***		0.004		0.043**
		(0.003)		(0.005)		(0.003)		(0.013)
First born girl × Fb dead		-0.003		-0.003		-0.000		-0.008
		(0.003)		(0.006)		(0.005)		(0.020)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE		✓		✓		✓		✓
Area 1 time trend		✓		✓		✓		✓
Ethnic group FE		✓		✓		✓		✓
Religion FE		✓		✓		✓		✓
Cluster controls		✓		✓		✓		✓
Baseline	0.03	0.03	0.13	0.14	0.03	0.03	0.16	0.16
Percent Effect	6.25	11.46	4.71	6.18	8.07	5.99	8.57	14.60
N	421,489	213,840	84,765	47,480	157,916	79,845	31,932	17,700
adj. R^2	0.02	0.03	0.04	0.06	0.02	0.03	0.04	0.06

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. Columns (1)-(2) and (5)-(6): the outcome variable is an indicator variable equal to 1 if the woman is currently divorced. Columns (3)-(4) and (7)-(8): the outcome variable is an indicator variable equal to 1 if the woman who is currrently divorced or has ever been divorced or separated. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

Table A12: Effect of first born girl on probability of divorce or separation

	Women age 20-35				Women age 30-35			
	Currently divorced		Ever divorced		Currently divorced		Ever divorced	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.000	0.002	0.006**	0.006	0.002	-0.001	0.011***	0.017*
	(0.001)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)	(0.004)	(0.008)
Age at first birth	-0.000	0.001**	-0.009***	-0.004**	0.001	0.002***	-0.006***	-0.001*
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
Mother's age	-0.005**	-0.002	0.017	0.028*	-0.005	0.003	0.149**	0.239
	(0.002)	(0.002)	(0.011)	(0.014)	(0.020)	(0.029)	(0.066)	(0.146)
Mother's age squared	0.000	-0.000	-0.000**	-0.001***	0.000	-0.000	-0.002**	-0.004
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)
First born dead		0.008***		0.034***		0.002		0.037**
		(0.003)		(0.008)		(0.004)		(0.012)
First born girl × Fb dead		-0.004		-0.002		0.004		-0.001
		(0.003)		(0.009)		(0.006)		(0.017)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE		✓		✓		✓		✓
Area 1 time trend		✓		✓		✓		✓
Ethnic group FE		✓		✓		✓		✓
Religion FE		✓		✓		✓		✓
Cluster controls		✓		✓		✓		✓
Baseline	0.07	0.06	0.16	0.16	0.07	0.06	0.19	0.18
Percent Effect	0.63	3.03	3.80	3.98	2.38	-2.34	5.96	9.25
N	421,489	213,840	84,765	47,480	157,916	79,845	31,932	17,700
adj. R^2	0.03	0.04	0.05	0.06	0.03	0.05	0.04	0.07

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. Columns (1)-(2) and (5)-(6): the outcome variable is an indicator variable equal to 1 if the woman is currently divorced or separated. Columns (3)-(4) and (7)-(8): the outcome variable is an indicator variable equal to 1 if the woman who is currrently divorced or separated or has ever been divorced or separated. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.

Table A13: Effect of first born girl on probability of divorce if first born alive

	All women				Women age ≥ 30			
	Currently divorced		Ever divorced		Currently divorced		Ever divorced	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
First born girl	0.002***	0.002***	0.006**	0.007**	0.002**	0.002*	0.009**	0.014**
	(0.001)	(0.001)	(0.003)	(0.003)	(0.001)	(0.001)	(0.004)	(0.005)
Age at first birth	-0.000***	0.000	-0.006***	-0.003**	-0.000	0.000	-0.004***	-0.002***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)
Mother's age	-0.001	-0.000	0.017**	0.012*	-0.000	0.000	0.005	-0.011
	(0.001)	(0.001)	(0.007)	(0.005)	(0.002)	(0.002)	(0.007)	(0.009)
Mother's age squared	0.000	0.000	-0.000***	-0.000***	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mother's year of birth FE	✓	✓	✓	✓	✓	✓	✓	✓
Mother's education level FE	✓	✓	✓	✓	✓	✓	✓	✓
Country-Survey FE	✓	✓	✓	✓	✓	✓	✓	✓
Admin. area 1 FE		✓		✓		✓		✓
Area 1 time trend		✓		✓		✓		✓
Ethnic group FE		✓		✓		✓		✓
Religion FE		✓		✓		✓		✓
Cluster controls		✓		✓		✓		✓
Baseline	0.03	0.03	0.13	0.14	0.03	0.03	0.16	0.16
Percent Effect	6.44	9.00	4.38	5.47	6.59	5.92	5.48	8.48
N	575,423	286,658	113,454	62,855	315,749	155,282	62,159	33,990
adj. R^2	0.02	0.03	0.04	0.06	0.02	0.03	0.04	0.07

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard Errors, in parentheses, are clustered at survey level. Columns (1)-(2) and (5)-(6): the outcome variable is an indicator variable equal to 1 if the woman is currently divorced. Columns (3)-(4) and (7)-(8): the outcome variable is an indicator variable equal to 1 if the woman who is currrently divorced or has ever been divorced or separated. Cluster controls include: rural dummy, log of population, average Purchasing Power Parity (PPP) in 2005 US dollars, average time required to reach a high-density urban center.