

# Knowledge Brief



*Health, Nutrition and Population Global Practice*

## BASIC PROFILE OF EARLY CHILDBIRTH IN MALI

*Chata Malé and Quentin Wodon*

**March 2016**



*Child Marriage Series with Education Global Practice*

### KEY MESSAGES:

- Measures of early childbirth are high in Mali. The share of women aged 18-22 who had a child before 18 is 44.9 percent and it has increased over time. The share of girls who had a child before the age of 15, at thirteen percent, has also increased.
- Early childbirth is associated with lower wealth, lower education levels, and employment without cash earnings. These are however only correlations, not necessarily causal effects.

In order to design programs and policies to reduce the prevalence of early childbirth, information is needed on its trend over time, where it is most prevalent in a country, and what the characteristics of girls giving birth early are.

#### Measuring early childbirth is needed to inform policy.

Early pregnancy and childbirth are important issues in many countries. Early childbirth is associated with higher health risks for the mother and the child as well as higher fertility. It may lead girls to drop out of school. In most countries, most early childbirths take place after marriage. But in some countries, it may also often take place without a marriage or union. To reduce the prevalence of early childbirth, specific programs and policies are required, for which basic information is needed. Using techniques inspired by the poverty literature, this brief provides a basic profile of early childbirth in Mali. The brief documents the extent of early childbirth, its trend over time, in which areas it is most prevalent, and what some of the characteristics of the girls affected by early childbirth are. The brief is part of a series of standardized briefs on this topic for several countries.

#### Box 1: Brief and Series Primer

**How is child marriage defined?** Child marriage is defined as a marriage or union taking place before the age of 18.

**Why a series on child marriage?** Child marriage has significant negative impacts – not only for girls, but also for a range of development outcomes. Demonstrating these impacts will assist governments and others to make the case for intervening to reduce the practice.

**What are the topics discussed in the series?** The series looks at the impacts of child marriage on health, population, education, employment, agency, and violence, among other outcomes. The welfare, budget, and non-monetary costs of child marriage are estimated. Legal/institutional aspects and options to reduce the practice are also discussed.

**What is the question asked in this brief?** The question is: How widespread is early childbirth, not only in terms of the share of girls affected by it, but also in terms of how early births occur?

**How is the question answered?** Measures and a profile of early childbirth inspired by the literature on poverty are provided.

## Almost one in two women have an early childbirth.

The analysis relies on data from the latest Demographic and Health Survey (DHS) for Mali for 2012-13, the latest DHS available. Table 1 provides basic statistics on the age at first birth. Two samples are considered: women aged 18 to 22, the youngest age group that can be used to measure early childbirth<sup>1</sup> and women 18-49 (the women's questionnaire in the DHS collects data for women up to age 49). Almost one in two women have their first child before 18, and 13 percent do so before 15. There is a decrease in the mean age at first birth between the 18-49 sample and the 18-22 sample. This is in large part because many women aged 18 to 22 did not yet have a birth and is therefore not worrying in itself. But as will be shown below, there is also an increase in measures of early child birth over time, which is worrying.

**Table 1: Age at First Birth for Women (%)**

	18-22 years	18-49 years
No live birth	30.4	10.5
18 or Above	24.6	51.2
Below 12	0.0	0.0
12	2.4	2.1
13	4.0	3.0
14	6.4	5.4
15	9.2	7.4
16	10.5	9.8
17	12.4	10.6
Total	100.0	100.0
Mean age at first birth	16.6	18.9

Source: Authors' estimation.

## Most early childbirths take place after marriage.

In Mali, there is a strong relationship between the age at first birth and the age at first marriage as communities do not look favorably at births out of wedlock. Table 2 displays the shares of girls with an early childbirth according to four categories in terms of the timing (or absence) of marriage among women ages 18-22. Most early childbirths take place after marriage, hence delaying the age at marriage is essential to avoid early childbirth.

**Table 2: Marriage and Early Childbirth, Age 18-22 (%)**

	Share
Early childbirth without marriage	5.1
Early childbirth before marriage	12.1
Early childbirth in the same year as marriage	17.6
Early childbirth at least one year after marriage	65.2
Total	100.0

Source: Authors' estimation.

<sup>1</sup> Early childbirth measures must be estimated on the population older than 18, because some younger girls who did not yet have a child by 18 could still have a child by the time they reach 18. It is best to measure early childbirth as early as possible after the age of 18 to provide data on conditions as current as possible, which is why the age bracket 18-22 is used here.

The consequences of early childbirth for girls and their children are not the same whether girls have a child at 12 or 17. Measures inspired from the poverty literature help in capturing how early girls have children (see the annex). The headcount (H) measures the share of girls with an early childbirth. The early childbirth gap (ECG) measures the "depth" of early childbirth, taking into account how early girls have children. The squared gap (SG) puts even more weight on the girls who have children very early.

## Early childbirths have increased over time.

Table 3 provides trends over time in the measures of early childbirth inspired by the poverty literature. Consider first the age group 18-22. In that age group, almost one in two women had their first child before the age of 18 (44.9 percent for the 18-22 age group). The early childbirth gap (CBG) is at 6.7 percent and the squared gap (SG) at 1.3 percent for that group. By estimating the same measures on older groups, the table provides the trend in early childbirth over time. There has been an increase over time in early childbirth, as has been the case for child marriage. The same is observed when considering very early childbirth before the age of 15<sup>2</sup>.

**Table 3: Trend in Early childbirth (%)**

	18 years			15 years		
	H	CMG	SG	H	CMG	SG
All 18-49 years	38.3	5.6	1.1	10.5	1.2	0.2
<b>Age group</b>						
18-22 years	44.9	6.7	1.3	12.8	1.4	0.2
23-30 years	42.2	6.3	1.2	12.0	1.4	0.2
31-40 years	31.0	4.4	0.8	7.5	0.8	0.1
41-49 years	31.9	4.7	0.9	8.9	1.0	0.1

Source: Authors' estimation. Values rounding to 0.0 not shown.

The incidence of early childbirth in Mali in 2012-13 was higher than that observed 25 years ago. There has been an increase over time in how early girls have children.

## Girls are more likely to have children early if they live in rural areas and are from poorer backgrounds.

As expected, early childbirth is much more prevalent in rural than in urban areas. There are also large differences between regions, with the lowest measures observed in the capital city of Bamako, and the highest measures observed (according to the headcount index with the 18 years threshold) in Kayes, Koulikoro, and Sikasso. Early childbirth is less prevalent in urban areas. The ranking of the regions in terms of the measures obtained with the 15 and 18 years thresholds tends to be similar.

<sup>2</sup> Note that the various measures have standard errors (not shown here to save space). While some of the differences in the trends over time are statistically significant, some are not.

**Table 4: Early childbirth by Location, Age 18-22 (%)**

	18 years			15 years		
	H	CMG	SG	H	CMG	SG
All 18-22 years	44.9	6.7	1.3	12.8	1.4	0.2
<b>Region</b>						
Kayes	56.1	8.5	1.7	15.9	1.8	0.3
Koulikoro	48.5	6.7	1.2	11.8	1.1	0.1
Sikasso	47.6	7.2	1.4	14.6	1.7	0.2
Segou	44.9	7.4	1.6	15.3	1.8	0.3
Mopti	41.7	6.5	1.3	12.5	1.4	0.2
Bamako	28.6	3.8	0.7	6.1	0.7	0.1
<b>Residence</b>						
Urban	30.9	4.3	0.8	7.5	0.8	0.1
Rural	50.4	7.7	1.5	14.8	1.7	0.2

Source: Authors' estimation. Values rounding to 0.0 not shown.

Rural girls are much more likely to have children early than urban girls. Girls from the bottom four quintiles of wealth are also more likely to have children early. The relationship between early childbirth, literacy, and education attainment is strong. Early childbirth measures are higher for women who work.

Household welfare is measured through a wealth index with households categorized according to five quintiles of wealth. Women who had a birth tend to be married, hence the level of wealth is that of the household in which the women married, not that of the household of origin. Yet the quintile of wealth after marriage and first birth may not be very different from that of the household of origin. On the other hand, since early childbirth measures are based on young women ages 18-22, their level of assets may be lower than would be the case later in life. In any case, the measures of early childbirth differ by quintile, and it is only with the top quintile that early childbirth is much less prevalent.

**Table 5: Early childbirth by Quintile, Age 18-22 (%)**

	18 years			15 years		
	H	CMG	SG	H	CMG	SG
All 18-22 years	44.9	6.7	1.3	12.8	1.4	0.2
<b>Wealth quintiles</b>						
Poorest	54.8	8.4	1.7	15.0	1.9	0.3
Poorer	50.5	7.5	1.4	13.6	1.4	0.2
Middle	50.2	8.5	1.8	21.0	2.4	0.3
Richer	48.2	6.7	1.2	11.1	1.1	0.1
Richest	27.7	3.8	0.7	6.6	0.8	0.1

Source: Authors' estimation. Values rounding to 0.0 not shown.

**Early childbirth is associated with lower education attainment, lower likelihood of literacy and higher labor force participation.**

Table 6 provides data on early childbirth by level of education of the women, as well as literacy. Early childbirth affects education attainment negatively, because girls often drop out of school when they have their first child. The causality goes the other way as well, as the ability to pursue one's education may help delay

the age at marriage and thereby the age at first birth. As seen in table 6, early childbirth measures are strongly correlated with education levels. The same is observed when considering literacy where three categories are considered: the woman cannot read at all, can read part of a sentence, or can read a full sentence.

**Table 6: Early childbirth by Education Level and Literacy Status, Age 18-22 (%)**

	18 years			15 years		
	H	CMG	SG	H	CMG	SG
All 18-22 years	44.9	6.7	1.3	12.8	1.4	0.2
<b>Education</b>						
No education	52.9	8.2	1.6	16.2	1.8	0.2
Primary, some	42.3	5.7	1.0	8.8	1.1	0.2
Primary, compl.	62.1	8.8	1.7	13.9	1.6	0.2
Secondary, some	24.8	3.3	0.6	5.7	0.7	0.1
Secondary, compl.	21.2	3.0	0.6	6.5	0.9	0.1
Higher	5.5	0.7	0.1	-	-	-
<b>Literacy</b>						
Cannot read	51.8	8.0	1.6	15.7	1.8	0.2
Limited ability	55.1	7.1	1.2	9.9	0.9	0.1
Full sentence	25.1	3.4	0.6	5.8	0.7	0.1
No card available	11.3	1.3	0.1	-	-	-

Source: Authors' estimation. Values rounding to 0.0 not shown.

Table 7 provides data on labor force participation. One would expect early childbirth to reduce women's labor force participation, for example through higher fertility. But if early childbirth is associated with poverty, women may leave little choice but to work. Other effects could also be at work. In Mali, early childbirth measures are higher for women who work. However, the type of work associated most closely with early childbirth is work with payment in kind, which may be work with low productivity.

**Table 7: Early childbirth by Labor Force Participation Status, Age 18-22 (%)**

	18 years			15 years		
	H	CMG	SG	H	CMG	SG
All 18-22 years	44.9	6.7	1.3	12.8	1.4	0.2
<b>Working</b>						
No	42.7	6.7	1.3	13.6	1.6	0.2
Yes	48.5	6.8	1.3	11.6	1.3	0.2
<b>Type of work</b>						
Not paid	46.5	6.5	1.1	9.8	0.9	0.1
Cash only	47.2	6.4	1.2	10.6	1.2	0.2
Cash and in-kind	55.9	8.8	1.8	16.0	2.0	0.3
In-kind only	71.8	13.4	2.9	36.4	3.4	0.4

Source: Authors' estimation. Values rounding to 0.0 not shown.

## Conclusion

This brief has provided a basic profile of early childbirth in Mali. Measures of early childbirth are high. The share of women aged 18-22 who had their first child before 18 is 44.9 percent and it has increased over time. The share of women with their first child before 15 is at 12.8 percent and has also increased. Early childbirth is associated with lower wealth and lower education levels, and employment without cash earnings. These are however only correlations, not necessarily causal effects. Other briefs in this series look at potential causal effects.

## References

Foster, J., J. Greer, and E. Thorbecke, 1984, A Class of Decomposable Poverty Measures, *Econometrica* 52: 761–776.

Nguyen, M. C., and Q. Wodon, 2012, Measuring Child Marriage, *Economics Bulletin*, 32(1): 398-411.

### Annex: Methodological Note

While many studies have discussed trends in child marriage, less work has been done on trends in early childbirth. When conducted, measurement of early childbirth (or early pregnancy) has focused on one simple statistic such as the share of girls who have a live birth before the age of 18 or 15. Such statistics are useful, but they do not capture well the distribution of the age at first birth in the form of aggregate statistics that tell us about the depth and severity of the problem. Basic statistics on the share of girls having an early childbirth also do not facilitate testing for the robustness of comparisons of trends in early childbirth between countries, between groups within countries, or between time periods.

Following the approach used by Ngyuen and Wodon (2012) for child marriage, this brief and its companion paper (available on request) rely on methods from the poverty literature to measure early childbirth. Three measures are used: the incidence of early childbirth or headcount index, the early childbirth gap, and the squared early childbirth gap. The headcount index is simply the share of the girls who have their first live birth before the age of 18. The headcount index can be computed for other age thresholds, such as 15 years of age.

The early childbirth gap represents the “depth” of early childbirth. It takes into account not only the share of girls who had their first child early, but also the mean number of years below 18 (or 15) at which girls had their first child. This matters because even if the share of girls who have their first child early does not change, there may still be improvements in the early childbirth gap if girls who have their first child early have that child a little less early.

Finally, the squared early childbirth gap measures the “severity” of early childbirth. While the early childbirth gap takes into account the average number of years of early marriage for girls who have their first child early, the squared gap takes into account the square of that number, thereby putting more emphasis on girls who have their first child very early. Together the three measures provide a better diagnostic of early childbirth than the headcount index alone. The measures also have attractive properties that are beyond the scope of this brief.

The headcount index, early childbirth gap, and squared gap are the first three measures of the so-called FGT class (Foster et al., 2014). Denote by  $q$  the number of girls who have their first child early and by  $n$  the number of girls in the overall population. Denote by  $y_i$  the age at which girl  $i$  had her first child and by  $z$  the age threshold defining early childbirth (18 years of age, but a lower age threshold such as 15 can also be used to measure extremely early childbirth). The general formula for the FGT class of measures depends on a parameter  $\alpha$  which takes a value of zero for the headcount, one for the early childbirth gap, and two for the squared gap in:

$$P\alpha = \frac{1}{n} \sum_{i=1}^q \left[ \frac{z - y_i}{z} \right]^\alpha$$

*This brief was produced as part of the Economic Impacts of Child Marriage study, a joint project of the International Center for Research on Women (ICRW) and the World Bank, which is supported by the Bill & Melinda Gates Foundation and the Children’s Investment Fund Foundation (CIFF). More details on the research can be found at the project’s website: [www.costsofchildmarriage.org](http://www.costsofchildmarriage.org). Partial funding for the work related to child marriage and education, labor force participation, earnings, and program responses has been provided by the Global Partnership for Education. Comments from Jeff Edmeades and Michele Gragnolati are gratefully acknowledged. The opinions expressed in this brief are those of the authors only and need not reflect the views of the World Bank, its Executive Directors, of the countries they represent.*

