

# Women's Empowerment, the Gender Gap in Desired Fertility, and Fertility Outcomes in Developing Countries<sup>†</sup>

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Perhaps the most consequential decision that people in developing countries make is how many children to have. Through the quantity-quality trade-off, fertility choice is closely associated with the accumulation of human capital, which is a main driver of success at the individual level and of overall economic development at the aggregate level. Not surprisingly, successful development is universally accompanied by large declines in fertility, a pattern known as the demographic transition.

One way in which fertility choice is special is that it is a joint decision of two people: it takes a mother and a father to make a child, and women and men do not always have the same preferences over fertility. In this paper, we document evidence on women's and men's preferences for childbearing in developing countries. Based on the evidence, we argue that incorporating household bargaining in analyses of fertility choice in developing countries is an important challenge for research. We also argue that there is a connection between fertility choice and the role of women's rights in economic development. If women and men have different preferences for childbearing, the extent to which women are empowered should have a bearing on fertility choices. There is evidence at both the macro and the micro level that this is indeed the case.

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## I. Women's Empowerment, Fertility, and Development

Across countries, there is a strong relationship between women's empowerment and fertility. As a measure of empowerment, we consider the OECD Development Centre's Social Institutions and Gender Index (SIGI), which measures discrimination against women in social institutions (formal and informal laws, social norms, and practices). The index is scaled between 0 and 1, where higher values correspond to more discrimination and hence less empowerment of women. Our fertility measure is the total fertility rate in 2010 from the World Development Indicators. Across 105 countries with available data, there is a strong positive correlation of 0.66 between SIGI and fertility. Some of this statistical association arises because both fertility and women's empowerment are linked to the overall level of development. However, in a regression of the fertility rate on the logarithm of GDP per capita (World Development Indicators, PPP adjusted in current international dollars) and SIGI, we still find a highly significant and quantitatively large association between SIGI and fertility. The estimated coefficient of 3.98 implies that a one-standard deviation decline in SIGI (i.e., more empowerment) is associated with a decline in fertility of 0.57 children (see the online Appendix for further details).

There are a number of channels that can lead to a link between women's empowerment and fertility. For example, less discrimination against women is associated with increases in female education, which in turn increases the opportunity cost of childbearing and lowers fertility. Here we are interested in a different channel, namely the possibility that women and men have different preferences over childbearing, and that women's empowerment gives women more say in the fertility decision. A study in line with this hypothesis is Ashraf, Field, and

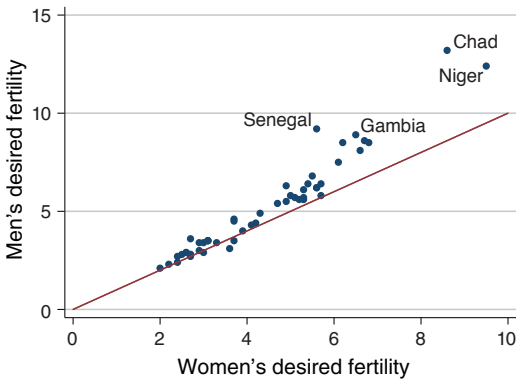


FIGURE 1. MARRIED WOMEN'S AND MARRIED MEN'S DESIRED FERTILITY ACROSS COUNTRIES

Note: Indicator "Mean ideal number of children for currently married women" resp. "married men."

Source: Demographic and Health Surveys, various years

Lee (2014), who find in a field experiment in Zambia that providing women better access to birth control in a way that can be concealed from their husbands substantially lowers fertility. To explore this hypothesis, we turn to data on gender differences in preferences over childbearing.

## II. Differences in Desired Fertility between Women and Men

We use data from the Demographic and Health Surveys (DHS) to document differences between women and men in desired fertility. We focus on information on the ideal number of children; for respondents who already have children, the survey question is: "If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?" Figure 1 plots the desired fertility of women against the desired fertility of men across 51 countries. Women and men's preferences are highly correlated, suggesting that there are important factors driving fertility intentions that affect both genders in a similar way. Nevertheless, there are also important differences between the preferences of women and men: in most countries, men desire more children than women do. In high fertility countries, these differences can be large, reaching as high as 4.6 children in Chad.

## III. The Role of Age Gaps and Polygamy

The observation of a difference in desired fertility between women and men may seem to suggest a gap between desired and actual fertility for at least one gender. However, this is not necessarily the case: it is possible for men and women to have different *realized* levels of fertility. Such differences can arise if there are age gaps between wives and husbands and if cohorts vary in size (Tertilt 2005). For example, if there is a 20-year age gap between husbands and wives, and if cohort sizes double every 20 years, there will be two women for every man, and hence each man will have (on average) twice as many children as each woman. In this example, the gap in the number of women and men in a given marriage market (defined by the age gap) can result either in some women not marrying and not having children (which lowers average fertility for women), or men could have children with multiple women, through sequential marriage, through having children outside of marriage, or through polygamy.

Indeed, while illegal in much of the world, polygamy is still common in Africa, and the countries where women's and men's fertility intentions are particularly far apart are all countries where polygamy is widely practiced. Field et al. (2016) document differences in realized fertility across women and men, and find that these are substantial in a number of countries with widespread polygamy.

These findings show that accounting for gender gaps in realized fertility and for polygamy is important. However, this does not imply that there is little disagreement between women and men about childbearing. There are differences between women's and men's preferences over childbearing even in countries where there is no polygamy and age gaps between spouses are relatively small. More importantly, at the micro level we also observe a wide variation in fertility preferences *within* couples, even when we consider only monogamous couples.

## IV. Differences in Fertility Intentions at the Micro Level

To illustrate the wide range of fertility preferences within couples, Figure 2 plots the distribution of the difference between a married

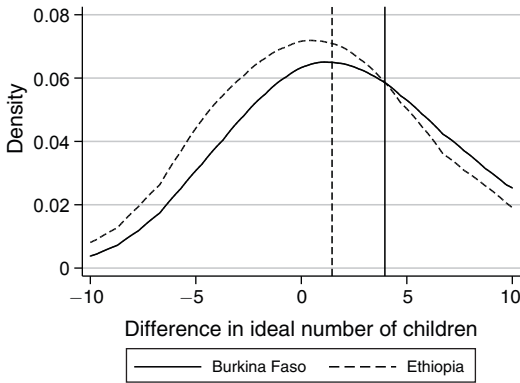


FIGURE 2. KERNEL DENSITY PLOTS OF THE DIFFERENCE IN IDEAL NUMBER OF CHILDREN BETWEEN THE HUSBAND AND WIFE FOR WOMEN AGE 45 AND OLDER BY COUNTRY

Note: Vertical lines denote mean of difference in desired fertility for each country.

Source: Demographic and Health Surveys, Burkina Faso 2010–2011, Ethiopia 2011–2012

man’s ideal number of children and that of his wife for two countries in the DHS, Burkina Faso and Ethiopia. In Burkina Faso, polygamy is common, whereas in Ethiopia it is rare. We focus on couples where the wife is at least 45 years old, so that the wife’s fertility is completed. In both countries, men on average desire larger families. In Burkina Faso, an average husband desires 4.0 children more than his wife does, and in Ethiopia, the mean of the gap in desired fertility between husbands and wives is 1.5. However, the main feature of the data displayed in Figure 2 is the extremely wide distribution of gaps in desired fertility, with many couples where the ideal family size deviates by five children or more.

Table 1 presents coefficient estimates for regressions of the wife’s realized fertility on desired fertility for these couples. Realized fertility is correlated with the desired fertility of both spouses. In Ethiopia the men’s preferences seem to matter more, whereas the opposite is true in Burkina Faso, where polygamy is much more common. One interpretation of this observation is that in a polygamous country, a man’s desired fertility may be realized with other wives or future wives, so that his preferences are less pivotal for determining the number of children with a specific wife. In contrast, in a monogamous country such as Ethiopia, we

TABLE 1—REGRESSIONS OF WIFE’S REALIZED FERTILITY ON WIFE’S DESIRED FERTILITY  $n_f$ , HUSBAND’S DESIRED FERTILITY  $n_m$ , AND INTERACTION WITH INDICATOR FOR ABOVE-MEDIAN FEMALE EDUCATION  $h_f$

	Burkina Faso (1)	Burkina Faso (2)	Ethiopia (3)	Ethiopia (4)
$n_f$	0.38 (0.07)	0.32 (0.08)	0.16 (0.06)	0.08 (0.05)
$n_m$	0.19 (0.05)	0.12 (0.06)	0.20 (0.06)	0.12 (0.06)
$h_f \times n_f$		0.36 (0.14)		0.34 (0.15)

Notes: Sample restricted to couples where the wife is at least 45 years old and where desired fertility does not exceed 15. Regressions also include constant and, in columns 2 and 4, indicator for high female education and interaction with husband’s desired fertility. Standard errors in parentheses. See the online Appendix for full results.

would expect that the impact of women’s and men’s desired fertility on the actual number of children corresponds to the overall distribution of power in decision-making between the sexes.

When we interact desired fertility with an indicator for above-median education of the wife, we find that in both Burkina Faso and Ethiopia the desired fertility of more educated women has a larger impact on realized fertility compared to less educated women. To the extent that more educated women have more bargaining power in marriage, this finding offers support for a role of female empowerment in fertility decisions.

The data do not offer strong insight into the root causes of disagreement on fertility. We have considered a number of potential determinants of the gap in desired fertility between husband and wife, such as the age gap between the spouses, the education gap, the age of the wife, the labor force participation status of the wife, whether the couple is polygamous, and various indicators of the wife’s role in making household decisions. Some of these variables have a significant impact on the difference in desired fertility in some specifications, but none of them plays an important role in both Burkina Faso and Ethiopia and after controlling for other factors. Moreover, in none of the specifications that we considered (details are available in the online Appendix) does the  $R^2$  exceed

0.07, suggesting that only a small fraction of the variation in fertility preferences within couples is accounted for.

#### V. Household Bargaining and the Link from Fertility Intentions to Outcomes

The fact that many couples in developing countries disagree about the ideal family size suggests that household bargaining should matter for fertility outcomes. In addition, if women's bargaining power increases in the course of development as women's rights are expanded, this should affect fertility decisions, and hence the speed of the demographic transition, which in turn feeds back into human capital accumulation and growth.

The observations discussed above already establish an empirical correlation between women's empowerment and fertility. We now consider how such a link would arise in economic models of household decision-making. In Doepke and Tertilt (2009), we contrast two extremes in terms of women's empowerment within the household. One is a setting of patriarchy, in which men make all the decisions. In such a setting, the realized fertility of a couple would be equal to the man's desired fertility alone.

The other extreme is a setting of equal rights and equal say in bargaining over fertility. In a recent study of bargaining over fertility in a developed-country context, Doepke and Kindermann (2016) argue that in this case each spouse should have veto power over having (additional) children. Their empirical results show that this is indeed the case: additional children are likely to be born only if *both* spouses want to expand the family. If there is a lack of ability to make compensating transfers between the spouses (for example, because of limited long-term commitment), Doepke and Kindermann (2016) show that in this case fertility will tend toward the minimum of the two spouses' desired fertility.

Combining these results, holding constant desired fertility of women and men, moving from patriarchy to equal rights will shift realized fertility from being given by man's desired fertility to the minimum of the woman's and the man's fertility. If there is wide variation in desired fertility within couples (which the data suggests is the case), a substantial fall in the overall fertility rate will result.

#### VI. A Research Agenda

Our results point to an important research agenda on the role of joint decision-making in the household for fertility outcomes in developing countries. Most of the existing literature on fertility choice is set in the framework of the unitary model of the household, which abstracts from gender differences in fertility intentions entirely. The study by Doepke and Kindermann (2016) builds on the assumption of veto power for each spouse, which matches well the data for developed countries, but may be less appropriate for developing countries where women have fewer rights. Other papers (such as Rasul 2008) consider disagreement, but decisions end up being made by the woman alone. What is needed is research that fills the gap between these polar cases and that can capture the full variety in family institutions and relative power in family decision-making that we find in developing countries.

This research agenda could also benefit from better data on couples' fertility intentions. Most of the data is about "ideal family size," and it is not obvious how to interpret such a survey question from the perspective of an economic model. A question that maps more easily into a bargaining model of the household is one where each spouse is asked whether they, given the current situation of the household, would like to have a/another baby within the next few years. Such data has recently become available (from the Gender and Generations Programme) for a set of developed countries (Doepke and Kindermann 2016), but is not widely available for developing countries. Gathering data of this kind could be fruitful for advancing research on the role of household bargaining for fertility decisions, and ultimately for human capital accumulation and growth, in the overall process of economic development.

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