

## **Marital Trajectories, Childbearing History, and Mid-Life Fertility Desires in Rural Mozambique**

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### Abstract

The connection between marriage and childbearing is an axiom of family demography, but little is known about this connection at advanced stages of women's reproductive careers in high-fertility low-income settings. We use data from a 12-year panel study of ever-married women in rural Mozambique to examine fertility desires as a reflection of marital and childbearing experiences. We differentiate three types of desires – desire to have a child soon, later, or not at all – and examine variations between married and unmarried women and within each of these categories. Among married women, we examine union order, formalization, polygyny status and husband's labor migration; among the unmarried, we contrast widows and divorcees. Preliminary results point to complex interactions between current status and past experiences: although married women are in general more likely to want children than unmarried women, there is also substantial variation in desired timing within each of these categories.

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## Extended Abstract

### **Background**

The causal link between marriage and childbearing is among the main pillars of demography. Marital status is a major proximate determinant of fertility that shapes fertility through “exposure to risk of conception” – even in settings where non-marital sexual activity is common, coital frequency is typically higher for married than unmarried individuals. Marriage also influences fertility behavior by increasing the desire for children. Even as the nature of marriage has evolved, childbearing continues to be an important motivation for marriage, particularly in developing settings. Much research linking marriage and fertility in high fertility, low-income settings has focused on age at first marriage as a key proximate determinant of population-level fertility and early childbearing. A smaller body of studies has examined the influence of marriage characteristics (e.g., formalization of marriage, polygyny, coresidence) and marital quality (e.g., couple communication, women’s autonomy) on fertility intentions and behavior, as well as on contraceptive use. Yet, remarkably little research has addressed the effects of marital dissolution and repartnering on fertility aspirations in developing, high-fertility settings. This gap in knowledge is particularly important for many sub-Saharan settings given elevated levels of early widowhood (due to excessive male adult mortality, especially in areas greatly affected by the HIV/AIDS epidemic, and to large age differences between spouses), increasing rates of marital instability, but also relatively easy entry into new partnership after marital dissolution.

Moreover, existing studies typically rely on cross-sectional data or on retrospective reconstruction of marital experience. Such analyses are subject to selective recall and reassessment of marital partnership characteristics (Chae 2012); they also suffer from inaccuracies in reporting pregnancy and birth histories and cannot reliably account for dynamics of fertility desires over time. In this study, we seek to overcome some of these limitations by engaging longitudinal data on marital and reproductive experiences spanning a dozen years from a high-fertility, patrilineal, rural sub-Saharan setting to analyze women's fertility desires in advanced stages of their reproductive careers, i.e., well after the onset of their marital life and childbearing. At these stages, women have to balance increasingly conflicting goals and motivations: the need to strengthen their marital partnerships and invest in their old-age security; the possible negative impact of childbearing on their health and the physical and economic burden of caring for an additional child; and the biological and culturally prescribed age limits of fecundity.

### **Marriage and Childbearing in Rural Sub-Saharan Africa**

Our approach rests on the assumption that in a traditionally pronatalist environment, like that of our study setting, fertility remains a main goal of marital partnership and a key measure of its success. Children are an enduring status symbol for both men and women and one of the few old-age investment options for their parents. In patrilineal settings, children as an old-age security resource may have a particularly high importance for women, as women's rights to property and other household assets are greatly constrained. Although in such settings children "belong" to their father's lineage, they most typically co-reside with their mothers until

adulthood, even in the case of marital dissolution, and are expected to support their mothers in old age. However, as elsewhere in the sub-Sahara these and other normative expectations and practices undergo considerable and rapid change, adding to the complexity of reproductive aspirations and actions.

Our analyses build upon prior research on fertility desires in sub-Saharan Africa, including our earlier research in the study site. This research points to both consistency and change in fertility desires, including desired timing of future fertility, as these desires adapt to individual and household circumstances and reflect individuals' experiences and perceptions of corresponding changes (Hayford and Agadjanian 2012; 2017; forthcoming). Prior research also indicates high levels of marital instability, especially in settings characterized by considerable spatial mobility due to male labor migration (e.g., Agadjanian & Hayford 2018a). Husband's migration has a complex effect on wife's fertility desires: while women married to migrants are generally more likely than those married to non-migrants to want another child, regardless of the number of children, this difference is statistically significant only for migrants' wives who see their husbands' migration as economically beneficial to the household (Agadjanian, Yabiku, & Cau 2011).

Because research on fertility after marital dissolution and repartnering in sub-Saharan Africa is scarce, we dialogue with the corresponding literature from other, primarily western settings. This literature generally shows a decline in fertility after marital dissolution but also higher probability of birth upon repartnering, largely regardless of the partners' fertility history, as the partners seek to cement their new union through childbearing (Thomson 2004; Thomson et al 2012; Thomson et al. 2014; Vikat, Thomson, & Hoem 1999; Zakharov, Churilova & Agadjanian,

2016). Importantly, these trends characterize both formal and informal higher-order unions (Zakharov, Chirilova, and Agadjanian 2016). While these studies inform our approach, they focus mainly on transitions to second or third births, which typically characterize early stages of childbearing in higher-fertility settings like the one examined in this study. Moreover, studies of marital dissolution, repartnering, and fertility conducted in contemporary developed contexts, where reproductive-age mortality is low, can be of limited guidance for developing settings where such mortality is relatively high and may strongly affect patterns of marital repartnering and their implications for fertility desires and behavior.

### **Study setting**

Our data come from Gaza province in southern Mozambique. The study area includes four contiguous primarily rural districts with a total population of c. 650,000. The area is largely monoethnic, dominated by the Changana ethnic group, traditionally patrilineal, and predominantly Christian. Fertility is high, with the total fertility rate in Gaza province above 5 children per woman. Marriage in Gaza is virilocal and traditionally formalized through payment of bridewealth, with only a negligible fraction of marriages involving civic registration or a religious ceremony. While marriage remains universal, in recent decades it has grown increasingly informal, measured by the steadily declining share of unions that involve payment of bridewealth (Chae, Agadjanian & Hayford 2016).

The local rural economy is dominated by subsistence agriculture. Low and unpredictable yields and the proximity of the Republic of South Africa have resulted in high levels of male labor out-migration. This migration has continued for generations; however, while it was

initially directly to South Africa's mines through a highly organized recruitment process, in recent decades it has become increasingly diversified and informalized, and consequently, its economic outcomes have become ever more unpredictable. Increasing rates of marital dissolution have been linked, among other factors, to migration's economic failure (Agadjanian & Hayford 2018a). Large-scale labor migration may have also contributed to the area's high HIV prevalence – around 25% of the adult population (the highest of all Mozambique's regions).

### **Conceptualization and Hypotheses**

The primary goal of the current study is to examine how women's marital experiences, in conjunction with their reproductive trajectories, shape fertility desires beyond early stages of their reproductive careers. Thus, we focus on the desire to have another child among women who have been in at least one stable marital partnership in their lifetime. We conceptualize "marital experiences" broadly to include current marital status, current marital characteristics (e.g., formalization of marriage, marriage order, polygamy, husband's migration), and past marriage experiences (dissolution and widowhood). Given the high prevalence of male labor migration in our study site, we also integrate women's exposure to husband's migration and its economic returns, into our conceptual and analytical models.

Following previous research (Hayford, Agadjanian, and Luz 2012; Hayford and Agadjanian, forthcoming; Timaeus and Moultrie 2008) we treat the desire to have a child soon or within the conventional birth-spacing norm and the desire to postpone the next birth beyond the culturally sanctioned birth interval as qualitatively different reproductive aspirations. The stated desired timing of future childbearing can be a marker of the strength of fertility desires:

individuals who want a child soon are generally more determined to continue childbearing than those who also want to have a child but prefer to postpone the next birth. It also reflects the balance between women's satisfaction with the number of children they have and their perceptions as to whether their current conditions are conducive to childbearing.

We expect that women in marital union will be more likely to want another child either soon or later than women who are divorced/separated or widows, net of other factors. However, we also expect to find variations in fertility desires across different characteristics of marriage.

Thus, women in second or higher-order marital partnership, who typically see childbearing as an instrument to strengthen the new relationship, should have stronger desires to have a child soon than women who are still in their first marriages. Fertility desires could also vary between women in formalized unions (i.e., unions cemented through payment of bridewealth) and in informal partnerships. On the one hand, the former should be more likely to desire a child soon as they may have greater confidence about the stability of their marriage than the latter.

However, alternatively, informally married women, similarly to women in non-first unions, may see childbearing as a means to enhance and even formalize their partnership, which may increase their desire to have a child soon. With respect to polygyny, we entertain two alternative scenarios. The first scenario assumes that co-wives in polygynous unions are engaged in continuous, even if subtle, competition and cooperation. Accordingly, compared to monogamously married women, women in polygynous marriages should be more likely to desire a child soon, as they compete for their husband's favor but also expect sharing the burden of child-raising with fellow co-wives. The alternative scenario, however, is based on the assumption that polygynously married women, *ceteris paribus*, would perceive their marriages

as inherently more fragile than their monogamous counterparts and therefore would be less likely to desire another child soon or at all. As earlier research shows, the success of husband's labor migration, measured by its impact on the household's economic well-being (Agadjanian, Yabiku, and Cau 2011) is associated with increased desire to have more children. We expect to find a similar pattern, especially with respect to the desire to have a child soon.

Finally, while we anticipate that unpartnered women, in general will be less likely to want another child than partnered women either sooner or later, we also expect to find significant differences between divorced/separated women and widows. Specifically, we hypothesize that widows will be less likely to want another child soon than divorced/separated women. This hypothesis rests on the assumption that widows are likely to remain part of their late husbands' households and thus are less likely than divorced or separated women to desire children with a new partner. It also assumes that at least some widows may not have undergone the ritual "cleansing" that allows them to resume sexual activity. The difference between the two sub-categories of partnerless women should be less pronounced in the desire to have another child later.

## **Data and Method**

### *Data*

We use data from a five-wave panel survey of women of reproductive age conducted in 2006-2018. The first wave (2006) included 1680 married women aged 18-40 sampled in 56 villages in the four districts of the study area in 2006. Randomly selected refresher samples were added in the two subsequent waves, conducted in 2009 (wave 2) and 2011 (wave 3), to replace the



original respondents who could not be located. However, some of those missing women were located and interviewed in subsequent follow-up attempts. As a result, the total sample size increased to 1868 in 2009 and 2059 in 2011. A short “bridge” survey was conducted again in 2014-15 (wave 4). Finally, the latest wave of the survey was carried out in 2017-18 (wave 5).

Although by design all study participants were in marital union at the beginning of the study, about a third of them experienced marital dissolution through husband’s death or divorce during the observation span. Many of these women subsequently entered new, typically less formalized unions (in the following text, we use “marriage to refer to both formalized and non-formalized unions, but we also distinguish between the two types whenever necessary). In each survey wave, respondents were asked whether they wanted to have a child in the future (if a respondent was pregnant at the time of interview, the question referred to her desire after the birth of the child). The survey also collected detailed information on respondents’ marital partnerships and a wealth of other individual, household, and community characteristics. Given the high levels of male labor out-migration in the area, the survey had a particular focus on migration status and experience of respondents’ marital partners.

### *Method*

Accordingly, we operationalize women’s fertility desires into three categories – wants to have a child soon (within two years), wants to have a child later (in more than two years), does not want to have a child. The corresponding multinomial logistic regression models first compare women in marital partnerships with those who are not, separating the latter group into divorced/separated and widows. We then add possible variations within the married group:

those in first vs. non-first unions; those in formalized (through payment of bridewealth) vs non-formalized unions and those in polygynous vs. monogamous unions. To capture possible effects of husband's migration status, we separate women married to migrants from those married to non-migrants; among migrants' wives, we also account for variations in the economic benefits of migration. For this analysis, following earlier work (Agadjanian, Yabiku, and Cau 2011), we use the wife's subjective assessment of her husband's migration success and distinguish between migrants' wives who thought that their husbands' migration had improved their household's material conditions and those who thought that it had not improve them (in subsequent analyses we will also gauge the effects of migrant's "objective" success as measured by financial transfers from the migrant).

The analyses are limited to women aged 28-49 who considered themselves fecund. Following previous research on fertility desires in sub-Saharan settings (e.g., Kodzi, Johnson, and Casterline 2012; Hayford, Agadjanian, and Luz 2012; Agadjanian and Hayford 2018b), the models control for age, number of children, experience of child loss, education, household material conditions (measured by a scale based on household ownership of certain key assets), household ownership of cattle (a traditional marker of wealth in this setting), respondent's self-reported health problems and nutritional security, her employment, and her religious involvement. The models also control for respondent's assessment of changes of her household economic conditions in the past three years – whether the conditions improved or worsened/remained the same. Finally, because observations are clustered within villages, to account for observed village-level variability, we estimate two-level models with a random intercept at the village level. These models are fitted using the `glamm` routine in STATA.

### **Preliminary results and next steps**

In this extended abstract, we report results of the preliminary cross-sectional analyses of the data from the latest, fifth survey wave. Table 1 present the distribution of the outcome of interest by different marital status categories. In general, three-fourth of the sample do not want to have another child, which is not surprising given its age range and childbearing record. Among those who do want to have at least one additional child, the number of those who want it soon is almost double that of postponers. Among currently married women, variations are relatively minor. Thus women in non-first marriages have a somewhat larger share of those who want a child soon and correspondingly lower share of those wanting a child later, compared to women in first unions. Women married to successful migrants are also more likely to desire an early birth, compared to both women married to unsuccessful migrants and women married to non-migrants. While no difference in the share of those wanting a child soon is noticeable between women in formalized vs. non-formalized marriages, the latter have a distinctly higher percentage of those wanting a child later. Polygynously married women are somewhat more likely to want a child soon and less likely to desire it later, compared to their monogamously married counterparts. Finally, Table 1 shows a strong contrast in the desire to have a child soon—but not in the desire to have one later—between widows and divorcees.

Table 1 here

Table 2 presents the multivariate results. First, women who reported having a husband or a permanent partner are compared to women with no husband/permanent partner (Model A). As we expected, being in a marital partnership has a strong positive association with the desire to have another child, regardless of the preferred timing of the next birth. Next, we subdivide the partnerless women into widows and divorced/separated, the latter being the reference category (Model B). In the desire to have a child soon vs. desiring no more children, the gap between married women and divorced/separated remains strong; the difference between widows and the reference category points in the opposite direction and is also statistically significant. Partnered women are also significantly different from divorced/separated in the odds of wanting a child later relative to not wanting another child at all, but corresponding difference between the two partnerless categories is modest in magnitude and not statistically significant. Interestingly, widows appear to have a stronger inclination than divorcees to opt for postponing a birth vs. having it soon, but the corresponding parameter estimate, while large in magnitude, is but marginally significant.

Table 2 here

Next, we break down the partnered category along the dimensions of theoretical interest. First, we consider the order of current partnership – first vs. non-first (Model C). The results point to some differences between the two groups in the direction suggested by the cement-new-union argument, but these differences are small and not statistically significant. At the same time, neither partnered group is different from divorced/separated in wanting a child

later rather than soon, while the corresponding difference between widows and divorced/separated is large but only marginally significant ( $p < 0.1$ ).

Next, we consider the formalization of marriage by separating women whose current partners have paid the bridewealth (fully or partially) from those whose partners have not (Model D). The results show rather similar relative odds wanting a child soon vs. not wanting a child at all for the two partnered sub-groups. However, the relative odds of wanting a child later vs. not wanting are statistically significant only for informally partnered women. And for the odds of wanting later vs. wanting soon, neither partnered group is different from divorcees.

We then separate monogamously married women from those in polygynous unions (Model E). The results show minimal variations between the two categories of partnered women with respect to relative odds of wanting a time soon vs. never. However, monogamously married women are more likely to want to postpone further childbearing relative to stopping it, compared with divorced/separated while the corresponding difference between polygynously married respondents is not statistically significant. As in the previous model, neither partnered group is different from the reference category.

Finally, we examine possible variations by current husband's migration characteristics. Following our conceptualization, we define three groups within the partnered sub-sample: those married to "good" migrants (i.e., migrants who migration brought improvements to the household), those married to "bad" migrants (migrations resulted in no improvement), and those married to non-migrants (Model F). The results illustrate the importance of accounting for the diversity of migration outcomes: while wives of "good" migrants are much more likely than divorced/separated to want another child soon rather than never and later rather than

never, the corresponding differences between the wives of “bad” migrants and the reference group are much smaller in magnitude and not statistically significant.

### **Summary and Next Steps**

The results of the preliminary analyses point to instructive patterns of variation in the desire to have another child and desired timing of future fertility between married and unmarried women and across different subsets of each of the two categories. As we refine and expand our analyses for the presentation at the PAA meeting, we plan to fine-tune our measures of respondents’ marital and reproductive trajectories and experiences. Specifically, we plan to connect each marriage with the number of children it produced and the timing of births within it. We also intend to account for duration of each marital experience and gaps between them, as well as changes in marriage characteristics, such formalized vs non-formalized union, monogamy vs polygyny (including wife’s rank), and husband’s migration status within and across different unions. To explore the possible effects of the quality of children, we will incorporate information on children co-residence, educational attainment, and, for older children, their occupational, occupational, marital, and childbearing characteristics. Finally, we plan to refine the measures of household economic security and add controls capturing relevant social dimensions of women’s well-being, such as co-residence with kin and in-laws and their embeddedness in their communities. These modeling enhancements will be guided by and will further inform the refinement of the conceptual framework of our analysis.

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Table 1. Descriptive results

Marital status (percent in sample)	Desire to have another child		
	Wants soon (15.18)	Wants later (7.97)	Does not want (76.85)
Currently not married (21.40)	9.94	4.70	85.36
Divorced/separated (8.75)	17.24	4.83	77.93
Widow (12.60)	5.09	4.17	90.74
Currently married (78.60)	16.59	8.85	74.55
In first marriage (71.70)	16.15	9.22	74.63
In non-first marriage (6.96)	20.51	5.98	73.50
In formalized marriage (41.02)	16.73	5.26	78.01
In non-formalized marriage (37.51)	16.50	11.21	72.29
In monogamous marriage (60.99)	15.58	9.75	74.67
In polygynous marriage (17.61)	20.13	5.70	74.16
Married to successful migrant (39.66)	20.86	11.28	67.86
Married to unsuccessful migrant (11.73)	16.03	8.33	75.64
Married to non-migrant (48.61)	13.28	7.02	79.69
Total	15.18	7.97	76.85

Table 2. Multinomial logistic regression results (odds ratios)

	A			B			C			D			E			F		
	Wants soon vs. Wants no more	Wants later vs. Wants no more	Wants soon vs. Wants later	Wants soon vs. Wants no more	Wants later vs. Wants no more	Wants soon vs. Wants later	Wants soon vs. Wants no more	Wants later vs. Wants no more	Wants soon vs. Wants later	Wants soon vs. Wants no more	Wants later vs. Wants no more	Wants soon vs. Wants later	Wants soon vs. Wants no more	Wants later vs. Wants no more	Wants soon vs. Wants later	Wants soon vs. Wants no more	Wants later vs. Wants no more	Wants soon vs. Wants later
Divorced/separated (ref.)																		
Widow				0.40*	1.30	3.18	0.41*	1.30	3.17	0.40*	1.30	3.19	0.40*	1.29	3.15	0.40*	1.30	3.19
Has husband/partner <sup>a</sup>	3.28**	2.41**	0.74	2.20**	2.73*	1.24												
First marriage							2.13*	2.75*	1.29									
Non-first marriage							2.79*	2.46	0.89									
Formal marriage										2.42**	1.85	0.77						
Informal marriage										2.12*	3.04*	1.44						
Monogamous													2.17*	2.94*	1.36			
Polygynous													2.29*	1.88	0.82			
Married to non-migrant																2.06*	2.52*	1.23
Married to "bad" migrant																1.63	1.85	1.13
Married to "good" migrant																2.81**	3.70**	1.32
Constant	0.02**	0.03**	1.76	0.03**	0.03**	1.04	0.03**	0.03**	1.02	0.03**	0.03**	1.03	0.03**	0.03**	1.01	0.03**	0.03**	1.05
Number of cases	1678			1678			1678			1678			1678			1678		

Notes: <sup>a</sup> Divorced/separated/widow is reference; Controls not shown. Significance level: \* p < .05; \*\* p < .01.