

Revisiting the Polygyny–Fertility Nexus in Sub-Saharan Africa:

The Role of Marital Dynamics

Background

Polygyny, defined as the practice of a man having multiple wives simultaneously, remains a widespread form of marriage in sub-Saharan Africa (SSA), where cultural traditions, kinship systems, and demographic structures have historically supported the practice. Although declining in some regions, recent surveys indicate that polygyny still involves a substantial share of women of reproductive ages, particularly in West and Central Africa (Bongaarts et al., 1984; Chae & Agadjanian, 2022; Fenske, 2015). Demographic research has long examined its fertility implications, showing that women in polygynous unions tend to have fewer children than their monogamously married counterparts. This negative association has been attributed to mechanisms such as reduced sexual exposure due to co-wife competition and time-sharing, which lower the frequency of intercourse and thus the risk of conception (Bongaarts et al., 1984; Isiugo-Abanihe, 1997; Pebley et al., 1988).

At the same time, marital dissolution and remarriage also shape fertility dynamics. Divorce, widowhood, or separation can interrupt reproductive exposure, while remarriage may modify childbearing intentions due to uncertainty, pre-existing children, or partner-specific factors (John, 2024; John & Adjiwanou, 2022). Emerging evidence indicates that women who experience marital dissolution are disproportionately likely to enter polygynous unions, creating a potential selection effect that further shapes fertility outcomes. If the observed fertility disadvantage of polygyny partly reflects this overrepresentation, conventional estimates may overstate the direct impact of polygyny. Overlooking the joint effects of polygyny, marital dissolution, and repartnering risks attributing fertility outcomes solely to marital form.

This study therefore re-examines the polygyny–fertility nexus by situating it within broader marital dynamics, across SSA countries. Specifically, it addresses three questions: (1) To what extent do polygyny influence women’s fertility outcomes in recent years? (2) Does the fertility effect of polygyny vary by marital dynamics? (3) if so, how does remarriage moderate the fertility disadvantage typically attributed to polygyny? Addressing these questions is crucial for refining demographic theory and advancing our understanding of how marital trajectories structure reproductive behavior across SSA contexts.

Data and methods

This study uses data from the Demographic and Health Surveys (DHS), pooling the most recent surveys conducted after 2014 across 23 SSA countries. The DHS provide nationally representative samples of women aged 15–49, with complete retrospective birth histories and detailed information on marital status and union histories, making them well suited for studying polygyny, remarriage, and fertility. The primary outcome variable is cumulative fertility (total number of children ever born), with supplementary analyses of recent childbearing within the three years preceding the interview.

To estimate associations, we fit survey-weighted generalized linear models (GLMs) with a quasi-Poisson link function to account for over-dispersion in fertility counts. The key explanatory variables include polygyny status and marital dynamics (coded as *married once* vs. *married more than once*). Control variables include age, age at first marriage, spousal age difference, religion, education of the respondent and her partner, household wealth, subnational region, urban residence, contraceptive use, and employment status.

Preliminary results

We first estimated the association between polygyny and fertility using a stepwise modeling strategy—beginning with a model that included only polygyny status and then progressively adding sociodemographic control variables. Figure 1 presents the country-specific estimates from the baseline model (black circles) and the fully adjusted model (red triangles). The x-axis indicates the estimated log-effect of polygyny on fertility, where positive values represent higher fertility among women in polygynous unions relative to those in monogamous unions. Across sub-Saharan African countries, the baseline estimates generally show a positive association between polygyny and fertility. However, after adjusting for factors such as age, education, and union duration, the magnitude of this association substantially decreases or becomes statistically insignificant in most countries. In other words, once key sociodemographic differences are considered, women in polygynous unions do not necessarily have higher fertility than their monogamously married counterparts in recent years.

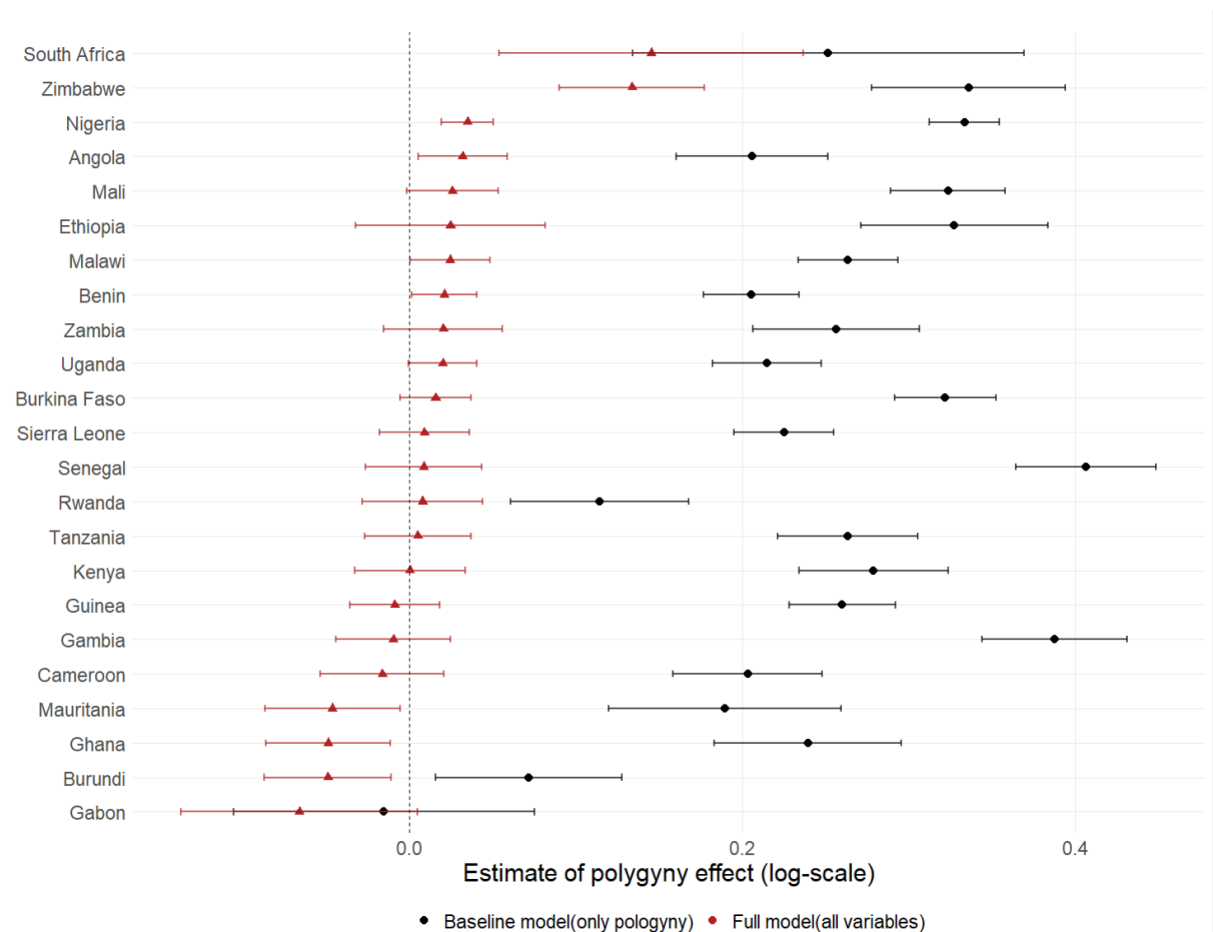


Fig. 1 Country-specific estimates of the association between polygyny and fertility in sub-Saharan Africa. Countries are ranked from top to bottom according to the magnitude of the full model estimates in red.

In our analysis, we also found remarried women are consistently more likely to enter polygynous unions compared to women in intact monogamous unions, with odds ratios ranging from about 1.5 to above, suggesting that marriage dissolution and remarriage play an important role in shaping women’s pathways into polygynous unions.

To further examine the joint effects of polygyny and remarriage on fertility, we included both variables as main effects and added an interaction term in the regression model, while controlling for sociodemographic characteristics. Although remarriage and polygyny are empirically associated, they are not perfectly collinear (Cramer’s $V < 0.3$), allowing us to estimate their separate contributions. This specification enables us to distinguish the effects of polygyny among women in intact unions and those in remarried unions.

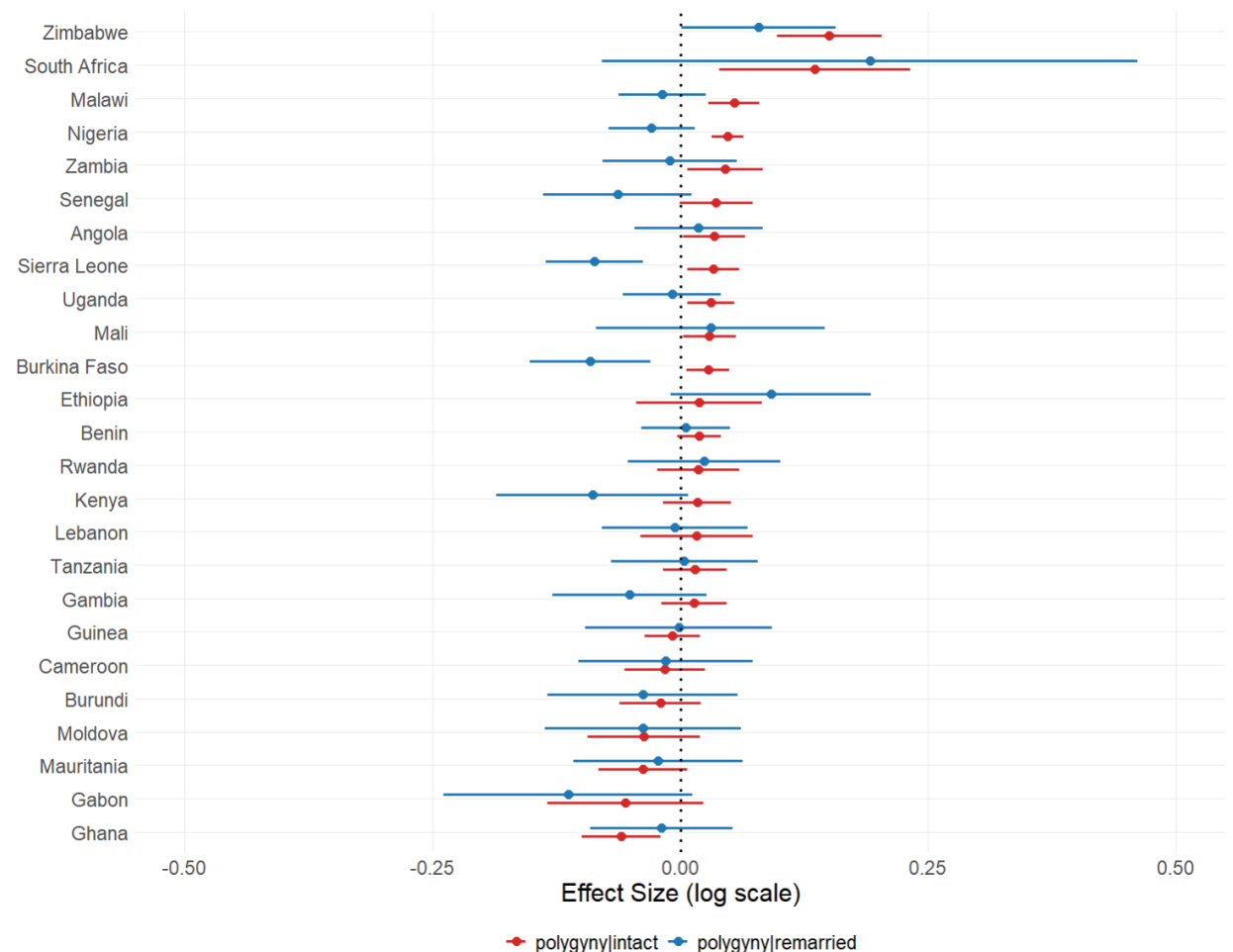


Fig. 2 Country-specific estimates of the association between polygyny and fertility by marital dynamics (intact unit VS. remarriage unit). Countries are ranked from top to bottom according to the magnitude of the polygyny effects in intact units.

Figure 2 compares the estimated effects of polygyny on women’s fertility between those in intact unions and those in remarried unions across SSA countries. Overall, the results reveal a heterogeneous pattern of the polygyny–fertility relationship by marital dynamics.

Among women in intact unions, polygyny is generally associated with higher fertility rates in countries such as South Africa, Nigeria, and Zambia, or shows no significant difference compared to monogamous women in countries such as Benin and Tanzania. Only in Ghana do polygynous women exhibit significantly lower fertility, with an estimated effect of -0.06 on the log scale, corresponding to roughly a 6% reduction in fertility relative to their monogamous counterparts. These findings shows some inconsistency with the country-level estimates shown in Figure 1, which did not account for marital dynamics, highlighting the moderating role of remarriage.

Despite the relatively small proportion of remarried women across SSA countries (ranging from 6.3% in South Africa to 20.7% in Ghana), the association between polygyny and fertility exhibits a distinct pattern among remarried women in SSA. Specifically, the estimated effects of polygyny are smaller and often statistically insignificant in this group. In Sierra Leone and Burkina Faso, entering a polygynous union after remarriage is associated with a reduction in fertility, while in these same countries, polygyny among women in intact unions is linked to higher fertility, producing a clear contrast. This divergence underscores how marital dynamics moderate the relationship between polygyny and fertility and supports our hypothesis that the fertility-depressing effect of polygyny is amplified among remarried women.

The preliminary results highlight that polygyny alone does not exhibit a uniform pattern of fertility outcomes across sub-Saharan African countries but rather varies contextually and is moderated by marital history. These findings remain robust when restricting the sample to women aged 40 and above and when focusing on the number of children born in the three years preceding the interview. In the next stage of the analysis, we will estimate the population-averaged effect of polygyny on fertility across SSA and further decompose the moderating component of remarriage to quantify its contribution to the overall polygyny–fertility relationship.

Reference

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