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# Elasticity of marital fertility in Sub-Saharan Africa: a decomposition analysis

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**Elasticity Of Marital Fertility In Sub-Saharan Africa: A Decomposition Analysis**


## ABSTRACT

### Background and problem statement

The question of the determinants of the fertility transitions of countries from sub-Saharan Africa (SSA) has been widely debated in the field of demography. Some scholars have investigated individual-level variables like contraceptive use, delayed age at marriage and participation of women in the labour force. Other scholars have used cultural factors to understand fertility change and patterns in SSA. The breadth of fertility literature includes studies that focused on female variables as well others that examined the role of men in the use of contraceptives. Methodologically, different analytical approaches have been used. These include cross-sectional standard and multilevel regression-based designs and decomposition techniques. However, studies of marital fertility have been few. Furthermore, there has not been a study of marital fertility transition that applied decomposition methods to analyse an age-adjusted indicator of fertility using a vector of determinants including male characteristics. This study was therefore designed to address this gap in the literature investigating the issue of the determinants of marital fertility transition with special attention to quantifying the relative contributions of the various classes of determinants namely proximate, demographic, sociocultural, geographic, female and male background variables. The study derived theoretical underpinning from the model of proximate determinants and the demographic transition theory.

### Data and methods

The data for the study were obtained from the Demographic and Health Surveys (DHS) for Ghana, Kenya, Rwanda and Zimbabwe. The four countries were selected firstly on the basis of their geographical location namely Central, East, Southern and West Africa. The second criterion of inclusion was that these four countries have experienced marital fertility transition. This consideration was important for allowing the examination of the determinants of marital fertility declines and stalls. A four-tier analytical suite of quantitative techniques was employed to address the specific research questions. Specifically, this research i) estimated and reconstructed trends of total marital fertility rates (TMFRs) for each of the four countries; ii) conducted statistical tests of trends in TMFRs; iii) estimated adjusted cross-sectional differentials in the levels of TMFRs; and iv) quantified the conditional contributions of the independent variables on the inter-survey decreases and increases in the mean age-specific marital fertility rate (ASMFR). The ASMFRs and TMFRs were estimated using a direct Poisson regression-based estimation approach and the statistical tests of trends were performed using linear regression. The analysis of cross-sectional differentials in marital fertility rates was performed using multilevel linear regression and the quantification of the impact of determinants on temporal marital fertility changes was performed using the threefold Oaxaca-Blinder decomposition technique based on linear regression and was implemented with the option to take into consideration the hierarchical nature of DHS data.

### Results

The results of the study showed that all the four countries have experienced marital fertility transition starting in the late 1980s. The transitions of Kenya and Zimbabwe are more advanced with the latter being the first of the four countries to experience a sustained period of decline in marital fertility rates. The reconstructed trends showed that there has been at least one instance of stalling in all the four countries. The results from multilevel regressions showed that age group, postpartum infecundity and contraceptive use were significant determinants of marital fertility rates. The impact of female variables was more notable for surveys conducted during periods of rapid fertility decreases while that of male variables appeared to explain differences of marital fertility levels in the surveys from periods characterised by stalling. The results from decomposition analyses showed male variables such as education status and desire for more children were the more likely to drive stalls and reversals of the marital fertility transitions in Ghana and Zimbabwe. The major drivers of the marital fertility transitions of the four countries studied were contraception, postpartum infecundity, male occupation, individual-level education of both females and males, and men's desire for children. The changes in the compositional characteristics of the samples by these variables were largely in tandem with the observed inter-survey decreases and increases of marital fertility rates. This implies that the inter-survey differences in the distributions of the samples according to the abovementioned characterised resulted in either significant decrease or increase in the average marital fertility rate, or the lack of notable change in the level of marital fertility.

**Conclusion**

This study concluded that the elasticity of marital fertility varies across countries; all the determinants investigated have associations with fertility which change over time. The four countries studied are at varying stages of marital fertility transitions. The rates of decrease in marital fertility rates have not been sustained over time as all the countries have experienced stalling at different stages. The understanding of the marital fertility transitions of SSA countries which are mostly patriarchal societies need to consider country contexts and associated epochs, male and female contributions.

**Policy recommendations**

Based on the results obtained from the study, it is recommended that fertility policies derived from global population management frameworks need to be adjusted to suit prevailing country-specific socioeconomic and demographic conditions. Given that SSA is mostly characterised by pronatalist patriarchal cultural conditions, policy interventions should be targeted at transforming men's attitudes to fertility and not just contraceptive use. Attaining widespread approval of modern methods by men without commensurate downward adjustment in desired family size may not be sufficient to sustain marital fertility decline as was the case in Zimbabwe post-2005. To facilitate shifts towards lower marital fertility rates, countries need to urgently increase the levels of educational attainment of their populations especially at secondary and tertiary levels.

**Frontiers for further research**

The frontier for further research emanating from this study include the need to investigate the parity thresholds at which husbands begin to prefer less children. It will be important for policy as well as for enhancing the stock of knowledge pertaining demographic change to understand

how men's desires for more children are associated with the parity levels of their wives compared to the total number of children including out-of-wedlock children. The other avenue for further research is with regards to two-sex modelling of fertility rates to comprehensively capture the influence of pronatalist male-dominated cultural contexts on the slow progress of fertility transition in SSA. Furthermore, the growing prevalence of the Pentecostal/Evangelical Christian Orthodox churches, widely known as charismatic churches, need to be investigated in relation fertility transition. This is because religion/spirituality especially that of the charismatic churches has become very integral to the lives of many people in SSA especially the West and Southern subregions. The extent to which these have impacted on the pace of fertility transition can be vital for policies and general understanding of the social transformations affecting demographic change.